

Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

DEC. 17, 1946

AIA urges research legislation

Asks action giving greater flexibility to armed forces in promoting development and procurement.....Page 7

*

Stronger role for ADMA seen

Attempts of association leaders to bring order into parts business begins to take effect.....Page 11

*

XB-42 flight shows advantages

432-mph. speed seems to justify earlier claims of efficiency gain by placing propeller in tail.....Page 9

*

Nazi production methods poor

American industry can learn little from enemy, report shows; output was sustained by slave labor. Page 22

*

Regulation showdown nearing

CAA and NASAO representatives to meet next month to settle federal vs. state handling of licenses.....Page 13

*

Cargo line exemption sought

U.S. Airlines attorney seeks classification averting regulation until after notice, hearing.....Page 35

*

Airline financial maturity shown

TWA credit agreement, largest ever arranged by any carrier, demonstrates industry growth.....Page 32

*

U.S.-British agreement clouded

Despite loan, "working arrangement" on air service appears most that can be achieved now.....Page 39



Trophy Winner: Gen. Carl A. Spaatz has been awarded the Robert J. Collier Trophy for 1944 for his direction of the U. S. Strategic Air Forces in Europe. The trophy was to be presented to Gen. Spaatz today by President Truman on behalf of the National Aeronautic Association, custodian of the award.



New World Standard

The claim is proved. Lockheed Constellations will bring new world standards in air transportation to every country on every continent. In regular scheduled service first on these great airlines:

AMERICAN AIRLINES OVERSEAS

EASTERN AIR LINES

FRENCH GOVERNMENT AIRLINES

ROYAL DUTCH AIR LINES (KLM)

NETHERLANDS INDIES AIRLINES (K.N.I.L.M.)

PAN AMERICAN WORLD AIRWAYS

PAN AMERICAN-GRAVE AIRWAYS (PANAGRA)

TRANSCONTINENTAL & WESTERN AIR (TWA)

THE NEW AIRLINE STANDARD

Lockheed Constellation

Look to Lockheed for Leadership  Years Ahead in the Science of Flight

© 1946 Lockheed Aircraft Corporation, Burbank, California, U.S.A.



THE AVIATION NEWS

Washington Observer



AAF AND PEOPLE—Battling a forthcoming drive to take the case for a strong, autonomous air force to the people, Gen. Arnold has voiced the first public criticism by a high AAF officer of the popular demand for demobilization. "The AAF is disintegrating," Arnold says, "because the people want disintegration." The counterattack will be a public relations program, conducted by an outside organization but with AAF approval and support, stressing airpower and air defense, and unification of the military services.

AIR POWER LEAGUE—The Air Power League will not figure directly in this new campaign, which will be headed by a nationally-known aviation figure. APL has had its financial troubles, with the board split on unification. For a while it was flitting with the Navy for support in its air defense efforts, but APL's trend toward unification has left the Navy cold. APL will quietly support unification, but concentrate on promoting air defense and let the new group carry the ball on the merger fight.

TTC TRANSFER—A decision is expected shortly on whether TTC—Technical Industrial Intelligence Branch—will remain under military jurisdiction or be transferred to the Commerce Department, which at present is releasing all reports available in this field. Most observers in Washington believe that Commerce will win the contest for this branch, a move that would make technical data in these reports more readily available to industry. The military will be framing over "restricted" and "confidential" which even in war-time never had too high a security rating.

SUPERMAN COMPLEX—The supersecret complex still is a major obstacle in the progress of private flying in the opinion of some CAA officials in that field. It started back in World War II when pilots were told and believed that they were beyond compare. The superior attitude of many instructors and the inadequate premises and services found at some fields, stem from the misguided notion of some aviation advocates that aviation is for an exclusive few. In fact, one official said, many youngsters and old farts can fly and nothing for a person to feel heroic about.

POST-WAR MILITARY POLICY—After a relatively uneventful existence, the House Committee on Post-war Military Policy has ceased to exist. Comprised of top-ranking members of the House military and naval affairs committees and the Appropriations committee, which created it, promised to be a powerful force. It was somewhat muted, however, because of conflicting views between Naval and Military representatives. Resignation from Congress of Rep. Clifford Woodson, chairman, was a factor in the decision to disband.

LEND-LEASE SETTLEMENT—Coming up is an announcement regarding a settlement with Great Britain on transports that country received under Lend-Lease. While financial considerations involved will be part of the \$650,000,000 Lend-Lease credit in the loss to Great Britain, the details will reveal types and numbers of transports England is retaining and the "price" of each. Britain has received 1,661 DC-3's and 11 C-54's under Lend-Lease, and is expected to keep approximately two-thirds.



This Curtiss XP-70C, experimental Navy fighter, never went into mass production



"The Modern Magic Carpet"*

LIKE the magic carpet of Aladdin Nights, the Bell helicopters will offer a new concept of flying. For these helicopters can fly forward . . . backward . . . sideways . . . and ascend and descend vertically. They can land in or take off from otherwise inaccessible terrain. They can carry passengers and cargo from door to door. And Bell Aircraft

perform specialized functions. Truly here is an aircraft that will become "The Modern Magic Carpet."

The Bell helicopters, at present, are not being developed to replace the family driver. They are designed for many practical commercial, industrial and military applications—for the public service of a kind which only the helicopter can perform. And Bell Aircraft

engineering is conclusive evidence that they incorporate the advanced thinking in design and workmanship which has won this company its reputation of being the "Pacesetter of Aviation Progress."

*See caption for U.S. and French versions.



BELL Aircraft CORPORATION
Buffalo 5, New York
PACEMAKER OF AVIATION PROGRESS

VOLUME 4 • NUMBER 21

Aviation News
McGraw-Hill Publishing Co., Inc.

December 17, 1945

AIA Urges New Legislation To Promote Aviation Research

Asks action giving greater flexibility to armed forces in promoting development and procurement to provide sound basis for public and private financing which is essential to continued leadership.

By SCOTT HERSHY

Leaders of the aircraft industry have concluded that to implement our air policy a long-term continuing program of research, development, procurement and service operations is necessary to provide a basis for public and private financing as essential to continued leadership in commerce and industry.

The Aircraft Industries Association, meeting in annual session in Los Angeles, held that in order to carry out such a program, new legislation is necessary to provide the maximum flexibility to the armed forces in their task of promoting scientific research and technological development and procurement of surplus weapons.

♦ Safety—The security of this country and the safety of the world require that the cooperative effort between science, government and industry be continued, in the words of Eugene E. Wilson, retiring president of the association and vice-chairman of United Aircraft Corp.

A statement of policy on international airworthiness which came out of the meeting declared that the aircraft manufacturing industry believes that a set of basic international airworthiness standards is a desirable objective. Such standards, the statement said, should be applied only to scheduled passenger or scheduled cargo aircraft.

♦ Safety—The statement held that such international standards should be based solely on safety considerations limited to 1. Structural integrity standards sufficient only to define basic landing conditions for which the airplane structure must be designed; 2. Per-

formance standards defining major emergency operating conditions; 3. Powerplant and equipment requirements necessary to maintain a proper level of safety.

The association's board of governors approved the report of the president and staff which detailed the handling of survival and long-term problems and the programs for meeting these problems in 1946.

♦ Funds—it also agreed to appropriate funds to carry out next year's activities, leaving determination of the financial program to a special committee composed



RADAR-GUIDED "BAT BOMB";

Carried under the wings of Navy Privateer bombers, these radar-guided bombs were launched outside the range of Japanese anti-aircraft fire and glided to their target. Called "bats" because they operated on the same principle as the animals which emit short pulses of sound and judge distances by the echo, the bombs were aimed by the mother plane but then guided themselves to their target, following it despite any evasive action. The bombs were approximately 12 ft long and had a 10-ft. wingspan.

volved; 1, the encouragement of mutual cooperation among nations; 2, respect for the rights of all nations; 3, development of international air transportation; 4, minimizing restrictions on free trade and 5, broad vision for future development.

The board also approved the report of the national Aircraft Show Committee, which recommended that AIA sponsor two national aircraft shows a year, starting in the fall of 1940, a situation discussed elsewhere on this page. **Advertising**—The board referred back to individual companies a proposed expert advertising and sales promotion program. The association, as such, will not sponsor such a campaign but it will encourage that a group of aircraft companies interested in this field may get together on such a program.

Cohu Is Named AIA President

LaMotte T. Cohu, general manager and chairman of the Board of Northern Aircraft, Inc., is the new president of the Aircraft Industries Association. He succeeds Eugene E. Wilson, vice-chairman of United Aircraft Corp., who becomes chairman of the AIA board of governors, succeeding Donald W. Douglas, head of Douglas Aircraft.



LaMotte T. Cohu

Others elected at the association's recent meeting in Los Angeles were:

Robert E. Gross, president of Lockheed, vice-president of AIA; Lawrence D. Bell, president of Bell Aircraft, vice-president, and Mr. Wilson, Mr. Douglas and E. B. French, president, Bendix, Alfred

AIA to Sponsor Only Two Shows

Only two national air shows annually will be officially sponsored by the Aircraft Industries Association.

Leading manufacturers, members of the association meeting in Los Angeles, decided the AIA should sponsor its members' participation in two shows a year. The right has been protested from the expense and trouble of participation in many shows which actually would be of no benefit to the industry.

Requests—Brought by requests from various cities for costly local and regional air shows, the manufacturers finally agreed to officially sanction only two shows, neither to be held before the fall of next year and both to be national shows, one primarily in New York, the other in Los Angeles.

The decision was reached only after a considerable discussion in which the possible benefit of a number of regional or local shows was given serious consideration.

The show committee determined that it would be almost impossible to net a profit after a number of regional shows, that the expense involved would be an unnecessary burden if members were asked to participate, that even more important than

the actual expense is the fact that the displays in many of these regional shows would tie up key sales and promotional personnel who are needed in working out problems involved in getting back into production, and that it would also tie up demonstration equipment which would be needed.

Local Shows—It was agreed, however, that there should be no objection to regional or local shows being held in which displays would be furnished by dealers or distributors as long as they could do no expense or participate on the part of the manufacturers.

Ernst E. Bresch, president of Bresch Aviation Corp. and chairman of the Air Show Committee, emphasized the manufacturers' desire to keep costs down and stated above all that they must not charge because they will not be ready to display their products.

Other members of the AIA Show Committee are Harry Woodhead, president, Cascadia Aviation, James C. Gandy, president, Consolidated Vultee; Leo Smith, Fairchild Engine & Airplane, L. D. Lyons, United Aircraft Corp.; A. M. Bachelder, Douglas Aircraft, and Frederick Collins, Boeing.

Marchev, president, Republic Aviation, and C. L. Eggevold, chairman, Boeing Aircraft, members of the Executive Committee.

Piper Elected—W. T. Piper, president, Piper Aircraft Corp., was elected to the board of governors, succeeding Clayton J. Brashier, president, Waco Aircraft. Other members of the board are:

Victor Emanuel, chairman, The Aviation Corp.; R. E. Gilmore, president, Ropery Gyroplane Co. Inc.; J. D. Knobellberger, president, North American Aviation; Glenn L. Martin, president, The Glenn L. Martin Co.; C. C. Cessna, president, Cessna Aircraft Co.; Walter C. Beech, president, Beechcraft Engine & Airplane Corp.; and Harry Woodhead, president, Consolidated Vultee.

Twining Replaces Kneff

Lt. Gen Nathan F. Twining has taken over command of the Air Technical Service Command headquarters at Wright Field, replacing Maj. Gen. Hugh J. Kneff, who has returned to Washington on special assignment to AAF head-

quarters. Gen. Twining is the former commander of the 12th, 13th and 38th Air Forces and lately has been commander of Continental Air Forces, Washington.

AVIATION CALENDAR

- Dec. 1—Hart International Aviation Show, El Paso.
Dec. 2—St. Michael Aeromarine Show, and Aero Show, St. Louis.
Dec. 3—Annual Meeting of the International Society of Safety Engineers, Toledo, Ohio.
Dec. 4—Annual Meeting of the Canadian Model Workers' Council, Toronto.
Dec. 5—Annual Meeting of the National Association of Aerospace Engineers, Washington, D. C.
Dec. 6—Annual Meeting of the National Association of Aerospace Engineers, Seattle.
Dec. 7—Annual Meeting of the National Association of Aerospace Engineers, Columbia, South Carolina.
Dec. 8—ATA Meeting, New Orleans, Louisiana.
Dec. 9—ATA Meeting, San Francisco, California.
Dec. 10—12—The Transonic Aerodynamic Society Meeting, Boston, Mass.
Dec. 11—Annual Meeting of the Research Federation of America, Boston, meeting power plant manufacturers.
Dec. 12—Southwestern Aviation Exposition, Fort Worth, Tex.
Dec. 13—Annual Meeting of the Aerospace Engineering Society, New York, New York.

XB-42 Flight Gives Demonstration Of Propeller-In-Tail Advantages

430-mph. average speed seems to justify earlier claims of efficiency gain through keeping wings clear of nacelles; craft has 5,000-mile range, carries four tons of bombs.

The prototype of the possible design of most future bomber and transport aircraft gave a convincing demonstration of its claimed advantages when the Douglas-built XB-42 established a new cross-continent, inter-city speed record of five hours, 17 minutes and 34 seconds between Long Beach, Calif., and Washington, D. C.

When clocked over Bell Field at the end of the flight, the plane was traveling at 430 mph. It had averaged 433 mph over the 2,293-mile distance.

Performance—Its performance seemed to justify previous assertions by Douglas and AAF that because of the undershoots location of propellers in the tail, leaving the wings free of nacelles, it has better aerodynamic properties than any other aircraft in flight, and that this was reflected by its speed, range, load capacity and economical fuel consumption [Aviation News, Sept. 17].

It has been claimed by one international aerodynamics authority that the most progressive step in aeronautical design is the propeller installation on the XB-42.

On the heels of the flight, AAF and Douglas released additional information on the XB-42 and its planned commercial counterpart, the DC-8. Range of the bomber is 3,000 miles and bomb load is

Attracts Crowd

Industry's interest in the novel Douglas XB-42, while of large standing, is fully matched by that of the public, it was demonstrated while the "Mighty" was at Washington's Bell Field. Following the initial landing at the National Airport across the river opened its famous Auto Transport Crossroad world air terminal to public inspection after well-publicized advance notice. Nearly 300 people at the ATC terminal, more than 3,000 to look at the XB-42 at Bell

"up to" fire test. Gross weight is 25,585 lbs. and empty weight 19,148 lbs. Because of its high speed, there are no forward-firing guns, although an interchangeable nose can provide an installation of 50 caliber machine guns and 75 mm. or 37 mm. canisters. Wing guns fire to the rear.

Power—The two Allison V-1710 liquid-cooled engines are rated at 1,320 hp with water injection for take off, and are located in the fuselage of the airplane aft of the cockpit. Two 60-ft. shafts furnish power to the 13-ft. counter-rotating Curtis-Wright electric propellers which are driven independently of each other. While the "boxed" engine with extension shaft arrangement has been used previously in Bell fighters, the XB-42's propeller installation is unique.

While the bomber is 33 ft. long with a span of 70 ft., the DC-8 is projected with a length of 77 ft. and a span of 118 ft. The transport is designed to carry 60 passengers and have a gross weight of 31,840 lbs.

Course—The Long Beach-Washington course flown by the XB-42 is not the official transcontinental run recognized by the National Aeronautic Association, that country's record-governing body. The official course is from Burbank to Floyd Bennett Field at New York City. However, the XB-42's flight will be an inter-city record.



'Micromaster' Arrives: Douglas Aircraft Co.'s undershot propeller bomber, XB-42, at Bell Field, Washington, D. C., following its record-breaking flight from Long Beach, Calif.

Superfort Sets Record

Confirming previous reports that it will be the AAF's first atomic bomber last week, jubilant a Wright-powered B-29 screeched the country along the official course from Burbank to New York in five hours 28 min. For the 2,454 miles, the B-29, which had recently established the distance record from Guam to Washington, D. C., averaged 444 mph. When confirmed by the National Aeronautic Association, that will be a new record, transcontinental record, too. In order to do the mark set a few days before by the XB-42, which, not being over a record course, is an inter-city record between Long Beach and Washington, D. C.

Gates Resigns Position As Navy Undersecretary

Artemis L. Gates has resigned as undersecretary of the Navy, effective Dec. 31, after having served four years as undersecretary and assistant secretary of the Navy for Air. Gates formerly was Navy's top bonkier and administrator, first

submitted his resignation to President Truman on Sept. 3, but at the President's request remained to work an demobilization.

At the beginning of the war Gates as assistant secretary for air was charged with Naval aircraft procurement.

Spaatz to Receive Collier Award Today

Recognition of work in employing air power against Germany is first for partly combat achievement.

Gen. Carl A. Spaatz today was to receive the Robert J. Collier Trophy for 1944 from President Truman at a White House ceremony. The trophy is bestowed annually by the National Aeronautic Association "for the greatest achievement in aviation in America, the value of which has been thoroughly demonstrated by no-

small use during the preceding year."

Gen. Spaatz won the 38-year-old award as commander of the U. S. Strategic Air Forces in Europe for "democratizing the air power concept through employment of American aviation in the war against Germany."

► **First Award of Trophy**—The oldest, and perhaps most prized award in aviation, the trophy was established by Robert J. Collier, one-time publisher of the magazine, in the hope it would promote improvements leading to safer flying. While awarded during World War II for achievements pertaining to military aviation, the Spaatz award is

the first for purely combat performance as such.

Reason, it is learned, is that the most signal aviation achievements in 1944 were regarded by the NAA trophy committee as being development and use of radar, and development and production of U. S. aircraft. Radar was not solely a U. S. project, and no one person or group was primarily responsible for the aircraft. It was believed that Gen. H. H. Arnold, AAF chief and member of the trophy committee, himself a trophy winner in 1942, recommended Gen. Spaatz as the originator of the strategic bombing concept as employed by the AAF.

► **Successor**—Gen. Spaatz, seen as the likely successor to Gen. Arnold as AAF commander, was born in 1891, graduated from West Point in 1914. Appointed as a military aviator assigned to aviation, he was a pilot in World War I and in the recent conflict commanded air forces in Africa, Europe and the Pacific.

Kansans to Promote Aviation Education

The Kansas Commission of Aviation Education, Inc., a group of individuals interested in active promotion and correlation of aviation education in schools, colleges and universities of Kansas, was organized at a recent meeting at the Boeing Wichita plant.

The commission assumed as its purpose the infusion of aviation educational material into all areas and levels of education from kindergarten through college. Between the time of its organization and setting up aviation institutions over the state, including workshops in the summer educational classes.

► **Officers**—Evan E. Ezra, superintendent of schools at Winfield, Kans., is chairman. J. J. Clark, assistant chief engineer of Boeing-Wichita, was named vice-chairman; Miss Iva D. Green, teacher of aeronautics at Topeka High School, secretary and Ray W. Elzey, compiler of Wichita University, treasurer.

In addition to the officers, board members include Minter Brown, professional relations director, Kansas State Teachers Association, Topeka; Lt. Col. Howard Wilcox, Kansas wing commander of the CAP, and Dr. L. W. Brooks, state superintendent of public instruction.

Vigorous Convention Indicates Strong Aviation Role for ADMA

Attempts of association leaders to bring order into parts business beginning to take effect; resolution criticizes government disposal of surplus aircraft components.

By ALEXANDER MCSUREY

Development of the youthful Aviation Distributors and Manufacturers Association into a strong force in civil aviation was indicated at the vigorous, fast-moving convention of the organization in Cleveland last week—the first independent membership meeting since formation over two years ago.

Attempts of association leaders to bring order and business-like methods into the aviation parts business as a national over-all policy are gradually beginning to take effect although many evidences of the chaotic conditions which obtained generally before the war still remain.

► **Problems**—Fug discount practices and classifying borderline distributors and dealers as customers, the two major problems of the parts business, continued to occupy much attention at this year's meeting. Emphasized, too, were the need for aggressive merchandising methods, and vastly improved service throughout the manufacturer-dealer-distributor chain down to the consumer.

Vigorous criticism of the government agencies disposing of surplus aircraft components was voted in resolution. The resolution called for more accurate investigation of items offered, more complete descriptions according to commodity trade designations, a more equitable pricing program, and an industry advisory committee to advise with the government agencies.

► **Charges**—The resolution charged that description of surplus is not accurate, does not make definite of article known, and in certain extreme cases, "disposal agencies have unwittingly bent themselves to what could be termed gross misrepresentation in private industry because condition, quantity and quality of goods was far below the descriptive matter as which the purchaser has rated."

More general addresses and discussion centered on personnel planes and the program future.

New ADMA Officers

W. F. Scott, Jr., of Supply Division, Inc., Robertson, Mo., is the new president of the Aviation Distributors and Manufacturers Association. Scott is a former director of the organization.

Vice-presidents are J. C. Harrower, vice-president of sales engineering, Avco Associates, Inc.; for the Midwest, and Herbert P. Leslie, president of the National Snow & Manufacturing Co., for the manufacturers.

Tom O' Duggan, vice-president of Thompson Products is the returning president of the association and automatically becomes chairman of the advisory board.

► **Resigned**—George A. Fecley was released executive secretary and H. Donald Roberts reelected secretary. Directors are Walter Hawkins, Glendale, Calif.; Bob Trager, Pasadena, Calif.; W. T. Jackson, St. Louis; Harry F. Wood, Birmingham, Ala.; Duane Strawn, Toledo, Ohio; E. S. Peterka, Cleveland; J. G. Baumer, New York; C. E. Meister, Detroit; and Rudy C. Mueller, Omaha.

and business men who would find flying increasingly useful in their work and recreation.

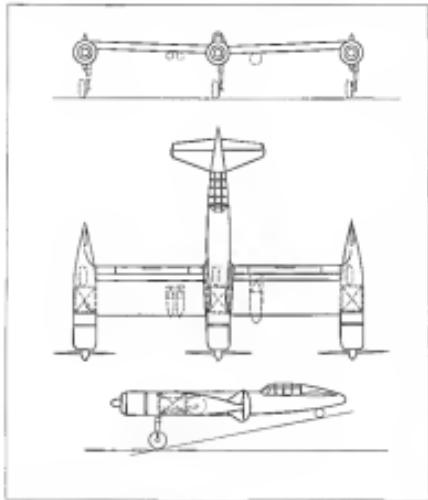
He emphasized the necessity for a "heads-up" policy in aviation merchandising and customer satisfaction.

Ray Snyder, president of Snyder Aviation and past president of ADMA, warned of the dangers of overestimating future sales volume. Many products, he pointed out, may become "dead merchandise."



NAVY EXPERIMENT:

Designed by Curtis Wright, this Navy fighter was one of the first experimental planes to use CW counter-rotating propellers. Designed the XP14C, the plane carried four 20 mm. guns, bombs and rockets and was equipped with a turbo-expander gear for high-altitude work. It never went into mass production.



NAZI TRIPLE THREAT:

The Germans were grasping at straws in weapons and aircraft designs as the Allies mauled them. Bf 109s, playing a brilliant part, put on paper, and frequently in the air, many radical concepts. This sketch, obtained exclusively by AVIATION NEWS, shows the P-175, which never got beyond blueprints. In it B & W planned to use two of the three engine nacelles on the wing tips as boosters to inhibit tip stallage, at the same time improving distribution of engine weight. American engineers did it and it was clever, but they thought that the moment of inertia would be prohibitively increased if the craft would accelerate too slowly in its vertical axis, and once started would spin like a top.

"size" on the shelves of dealers and distributors unless the manufacturer properly analyzes his sales potential and his markets.

► **Volume**—He quoted figures on the number of automotive parts jobbers and dealers in various cities whose total automobile sales were comparable to all the airplanes sold in a power year in the United States. Chattanooga, 26,012 cars and trucks, has 13 jobbers and 17 dealers; Duluth, 20,011 cars and trucks have 11 jobbers and 10 dealers. On a comparison of cost, taking four automobile for one plane sold, he cited Houston with 104,726 cars and trucks sold, 34 jobbers and 45 dealers.

Warning of the dangers of spreading aircraft parts distribution—"too thin" throughout the nation on the basis of sales volume, he added.

"Some manufacturers with more than 100 distributors are way out in left field."

► **Suggestions**—R. V. Trader, of Bob Trader Aero Supply, Pittsburgh, reviewed suggestions of other distributors:

► Manufacturers should give advance notice of obsolescence and permit return of a certain percentage of obsolescent parts.

► Weekly meetings with sales staff to go over predictions and sales facts received from manufacturers should be held.

► Manufacturers should establish a distributor liaison man, who should follow through on orders and service to distributors.

R. B. Ezell, Air Accessories, Dallas, called for a distribution policy "with teeth in it" to determine whether a customer is entitled to be accorded a dealer's discount.

Executive Secretary George Ferney, reported on the ADMA collection service for delinquent accounts, its credit interchange service, and continued growth and activity of the association.

He urged the participation of aviation business men taking a more active part in government, and in knowing their local representatives and making their needs known to them for congressional action.

Air Forces Combined

The Far East Air Force and Strategic Air Force have been telescoped into one organization, Pacific Air Command, U. S. A. This command comprises the 8th, 7th, 13th, 5th and 30th air forces under Gen. George C. Kenney.



First Flight Largest amphibian ever built, the Martin XPBM-3A takes off on its first test hop from the seaplane field at Middle River, Md. The ship is a modification of the Mariner, gall-toughed flying boat used by the Navy.

Dr. Cox Delivers Wright Lecture

Dr. Harold Beesley Cox, vice-president of the Royal Aeronautical Society, was to deliver the ninth Wright Brothers Lecture this week, an introduction to the work done in Great Britain on aircraft gas turbines.

The two main lines of development associated with the axial and centrifugal compressors were to be traced, and the extension of this work into practically the whole of the British aircraft engine industry described.

► **Joint Effort**—Contributions of various British firms are noted and

as well as the collaboration that was developed between the Allies.

The lecture, commemorating the 43rd anniversary of the first airplane flights made by Greville and Wilfrid Wright at Kitty Hawk, was presented in Washington by the Institute of Aeronautical Sciences.

► **Comments**—There were to be prepared comments by Carlton Kemper, executive engineer, Aircraft Research Laboratory, National Advisory Committee for Aeronautics; R. P. Koenig, manager of the engineering aviation gas turbine division, Westinghouse Electric Corp., and Donald F. Warner, assistant designing engineer, aircraft gas turbine division, General Electric Co.

Giant Martin Amphibian Tested

The largest amphibian ever built, the Glomar, a Martin XPBM-3A, made its first test hop last week at Middle River, Md., in miserable weather.

The ship is a modification of the Martin PBM Mariner, more powerful, multi-winged flying boat which had been built originally by the Navy. The Mariner has been cut off in front nose with 40 men aboard, 30 more than her usual complement.

► **Pilot Purpose**—The new craft becomes dual purpose. It will be able to fly from runways, using a tricycle landing gear, with the forward main folding into the hull, the main wheels swiveling a 180 degree arc to rest in wells built into the hull sides.

The airplane which flew last week is the largest amphibian to get beyond the design stage. Although the basic airplane is a Mariner, it was necessary to mod-

ify certain basic substructures such as deck and tail assembly, is identical with the PBM-4, the hull section forward, where the leading gear is located, has been completely redesigned, however, with bulkheads reinforced to carry the loads.

► **Landing Gear**—The land gear is a special Martin design. The main wheels operate on a single steel shaft or trunnion. Hydrostatic power boosts and lowers them. Automatically operated locks hold them in position. Although the landing gear and the conversion gear are separate, they are extremely strong. Only 4,000 lbs. has been added to the total weight of the aircraft. The plane is expected to have a gross take-off weight of 64,000 lbs. on land and 50,000 lbs. on water. It is powered with two 2,200-hp Pratt & Whitney engines turning Curtiss four-blade propellers.

The airplane which flew last week is the largest amphibian to get beyond the design stage. Although the basic airplane is a Mariner, it was necessary to mod-

PRIVATE FLYING

Federal vs. State Regulation Of Aircraft Nearing Showdown

CAA and NASAO representatives to meet next month to discuss final point of difference—whether states shall issue and revoke pilot and aircraft licenses.

By WILLIAM KROGER

With new airplanes on the way, an increase in airports halfway promised and civil air regulations simplified in a decree, CAA, the industry and private flyers' organizations are moving to resolve still another of the private pilot's problems—the extent of regulation, licensing and policing of planes to be undertaken by the Federal and state governments.

Next month, CAA representatives will sit down with a committee of the National Association of State Aviation Officials to attempt to decide once and for all the final point of difference between the two—whether states shall have the power to license aircraft and aircraft and, consequently, revoke licenses.

Through a series of conferences which will culminate next month, CAA and NASAO have narrowed the conflicting views between them until there seems to be a fair chance that an agreement can be reached. CAA is not expected to retreat from its position to retreat from its position that states cannot revoke Federal licenses, but probably will not object to state licensing for purposes of information. H.R. 3383, if ever

er is "canceled" in recommending an act of that scope.

► **State View**—State representatives maintain that policing of regulations is a state function and can best be upheld without the power to ground offending aircraft. CAA, on the other hand, insists the states have all the power they need through their right to impose fines and pull certificates on violators.

Through a series of conferences which will culminate next month, CAA and NASAO have narrowed the conflicting views between them until there seems to be a fair chance that an agreement can be reached. CAA is not expected to retreat from its position that states cannot revoke Federal licenses, but probably will not object to state licensing for purposes of information. H.R. 3383, if ever

enacted—it is dormant at present—will provide that state names and aircraft requirements shall conform to those of the Federal Government, and that states be given police power over the regulations. A compromise of sorts will then have reconciled CAA and NASAO.

► **Connecticut**—It is the licensing provisions of the Connecticut regulations that chiefly attracted the fire of the AOPA. The association's bulletin recently printed a complaint of a pilot against Connecticut's physical examination regulations, which require certification by a state-appointed doctor. AOPA also claims that the state's proposed CAA inspection and licensing of aircraft and airmen is not acceptable, because the Commissioner of Aeronautics may change regulations and revoke licenses without hearings and on other grounds.

In response to a request from AVIATION NEWS, Connecticut's Aerospace Commissioner, Kenneth H. Ringrose states "all of our (medical) examiners . . . are also CAA flight surgeons, and this one examination is all that is necessary." At the present time 22 miles is the greatest distance anyone would have to travel for an examination, with the average distance being 11.4 miles."

► **Changes**—In his power to change regulations, Mr. Ringrose asserts, is an asset as it enables the state code to be quickly revised to com-

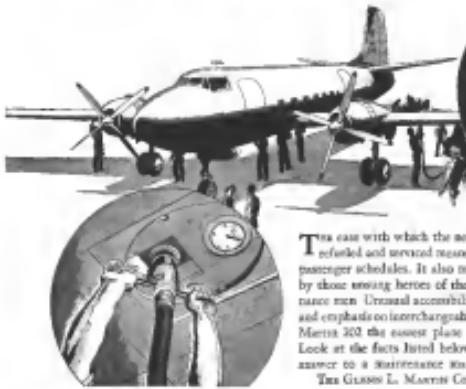


"REMODELED" TAYLORCRAFT

This float plane, reconstructed from a standard Taylorcraft mid-size-lightplane, has successfully passed first flight tests at a Pittsburgh seaplane base. Weighing 1,250 lbs. and powered by a 65-hp Franklin engine, the craft is to be streamlined and have retractable wheels added, according to its designers, D. Harry Peatt and Kenneth L. Eason, who formerly were associates with the Taylorcraft firm.

WHAT THE NEW

Martin 2-0-2 MEANS TO AIRLINE MAINTENANCE MEN



Quick Refueling To reduce waiting time at airports, the new Martin 202 is designed for quick refueling. Fuel tanks are located under the wings, so fuel can be taken on and off quickly without having to remove the wing covers.

This ease with which the new Martin model 202 transport can be refueled and serviced means more than shorter stops and faster passenger schedules. It also means a lot of time and trouble saved by those serving heroes of the air lines, the hard-working maintenance men. Unusual accessibility, rugged long-lasting construction, and emphasis on interchangeability of parts—these features make the Martin 202 the answer plane of its type to service and maintenance. Look at the facts listed below and you'll see why the 202 is the answer to a maintenance man's prayer!

THE GRUMMAN L. MARTIN COMPANY, BALTIMORE 3, MARYLAND

Martin
AIRCRAFT
Builder of Potomac

form to CAA requirements. Although he does have the authority to suspend or revoke licenses without hearing, appeals may be taken to court. Connecticut requires periodic inspection of aircraft, which are made without charge and at the home airport of the airplane at the owner's convenience. When it was proposed that this system be changed, Mr. Banrose says, "operators and private pilot side blandly stated that they wished these inspections continued."

Along with the fact that state registration is burdensome, pilots have criticized it on the grounds that it is another expense. Connecticut's consumer protection act that receipts from license and registrations in that state are used to carry out the airmarking program and other purposes benefiting aviation, with none of the revenue assigned to operate the aeronautics department.

Piper Distributors to Handle All Replacement Parts

Convinced that service will be a factor in future aircraft sales, Piper Aircraft Corp. is planning its sales program with the idea that purchase of replacement parts or aviation accessories by mail is rapidly ending. According to J. W. Miller, domestic sales manager at Piper, the man who needs these items will expect to buy them over the counter, the same as he buys auto parts.

A cost survey of handling service parts revealed that service



Engine Installation New 100-hp Continental engine installation on the pre-war Dart has progressed to about 1,000 units. Engine kits for converting the powerplants are being offered by the plane manufacturer.

must pay for itself. The sale of new planes could not be expected to carry the expense entailed. Piper, although ahead of other manufacturers in number of aircraft in the field, has only about 15,000 Cabs flying in the United States today. Therefore, it is planned that each of the 32 distribution centers will carry a complete line of Piper replacement parts, with the factory at Lock Haven not attempting to service the individual customer directly.

Accessories

Arrangements with engine manufacturers will enable the distributors to handle a complete line of replacement parts. Accessory manufacturers also have contracted to provide accessories desired by an individual owner directly through the distribution organizations.

Michigan Company To Produce Darts

Plans to produce the Dart, two-place side-by-side monoplane at Tecumseh, Mich., have been announced by Applegate & Weirant Engineering Co.

The plane will be essentially the same as the pre-war Dart, except for installation of a 100-hp. Continental 6-cylinder engine with starter and generator, in place of the 90-hp. powerplant previously used.

Conversion — Ray Applegate, chief engineer, reports approximately 36 of the pre-war Darts still in the field, but that about half of these are grounded because of engine difficulties and lack of parts. His company has announced a \$1,000 conversion kit for installing the new 100-hp. Continental, which makes the changeover possible in two to three hours. Some conversions now are going through the factory on a production basis.

Changes in the new production model will include lowering the instrument panel four inches, with resultant better visibility, addition of a switch and adjustable propeller. The new Dart is expected to be on display at the Miami All American Air Meetups in January. With the new engine, it cruises at 130 mph and has an average landing speed of 62 mph, the company reports.

Cabover Prototype — The pre-war Dart was a low-wing monoplane with fixed landing gear, which was manufactured at Columbus,



Distribution Service Stores: Typical of Piper Aircraft Corp.'s campaign toward streamlining the merchandising of Cab replacement parts, aviation accessories and equipment required by personal plane

owners and airport operators, are these distribution stores (left) operated by Muskeg Aviation Co., Muskeg, Ind., managed by Clyde E. Shockley, and the other operated by A. W. Wheeler at Portland, Ore.



"Dart" Conversion: Powered with a new 165-hp Continental engine, this conversion of the pre-war Dart airplane is credited with 125-mph cruising speed. Conversions and new Darts, such as those modifications, are being manufactured at Tecumseh, Mich., by Applegate & Weyant Engineering Co.

Ohio. Shortly after completion of the Dart Model G two-place plane with retractable landing gear, the Culver Aircraft Corp. was formed to take over the manufacturing and sales rights for the plane, which then became the original Culver Custer.

The Dart is known to avoid pressurized airshowes as an aerobatic plane, and was flown in a caged-wing 19-ft. span version by Don Walters, stunt and test pilot who specialized in low-altitude aerials down flights.

Applegate states that there is no connection between his company and the Culver Aircraft Corp.

Reflector Markers Prove Successful

Tests conducted at Rochester, Minn., with "Scotchlite" reflector markers at airports, have been pronounced successful by CAA observers, D. W. Green & Sons, manufacturers of the reflectors, report. The impermeable lighting equipment, have announced. The equipment is designed for runway areas on small fields where permanent underground warning systems would be prohibitive in cost.

The vertical markers, 11 to 14 inches in height, were placed at 300-ft intervals along runways at Rochester Municipal Airport, and two turf landing strips were marked out simulating turf runways on small fields. Other reflectors were placed on telephone poles and the name "Rochester" was spelled out in reflectors on the hangar roof.

Headlights—The reflectors were lighted by an Ozark Headlight trailer, rated at 5,000 watts and generating standard 115-volt 60-cycle single phase alternating current of more than 1,000,000-coulombs.

Lightpower. The lights included two 1,000-watt floodamps, 24 spotlights of 130 watts and six low-intensity spotlights. The four-place Stinson and two-place Piper planes used in the test were equipped with landing lights, but these proved insufficient to light the ground markers.

The material used in the reflectors is a product of the Minnesota Mining & Manufacturing Co.

Fairchild Readying M-84 "Family Plane"

First flight tests were scheduled last week on the prototype Fairchild M-84 "family plane" which has been under construction at the Hagerstown, Md., factory.

A four-place, low-wing cabin plane, the M-84 is patterned after the company's wartime PT-23 trainer. It has a span of 38 ft. and length of 26 ft. Power plant is a Continental seven-cylinder radial air-cooled engine of 230 hp. The M-84 is designed to climb at a rate of 600 fpm and achieve a top speed of 190 mph. at sea level. It

has retractable landing gear.

Equipment—Standard equipment on the M-84 will be simple fastener, altimeter, compass, tachometer, engine and fuel gauge, ammeter, timer, generator. Radio and blind flying equipment will be extra. Fuel capacity is 50 gallons, and gross weight 3,300 lbs.

Gimbel's, New York To Sell Taylorcrafts

Joining the department store trend toward personal airships merchandising, Gimbel's, New York, has announced the agency for Taylorcraft in a flamboyantly written advertisement decorated by a drawing of a winged horse pulling a man in an old-fashioned buggy.

"There is no place in the sky for the agent by-and-by," says the Gimbel ad. "Buy your Taylorcraft today to fly to Wilkes-Barre to keep a business appointment Monday. Flying is easier than driving a car in this bungling of a plane."

"It's Easy!"—The advertisement continues: "Of course it takes a little longer to learn. The average person drives in six hours, learns to fly in eight hours. But once you've learned it's easy as pie. Flying doesn't call for the steady concentration and alertness you need to pilot your car through city traffic, around curves as the Sawmill River Parkway. With eight lessons you'll probably be flying."

Among proprietaries claimed, the advertisement declares: "This is the sweetest flying plane that ever took to the air . . . War Training school operators have found Taylorcrafts easiest to maintain than any other plane at any price. This plane has the roughest,



Fairchild Family Plane: First picture of the M-84 prototype of the four-place plane projected by Fairchild Engine and Airplane Corp. as a "family plane." Expected to make its first flight next week, the aircraft has not been type certified according to CAA.

An Open Letter on Policy

Regarding KOLLMAN Products and the new

Scout
Instruments

Kollman intends to continue the development and manufacture of instruments second to none in precision and reliability for the Military Forces and Airlines of the United States. This is the field where the ultimate is required, expected and demanded. We have the vision, the facilities and the staff to provide it.

This same Kollman standard of quality guides us also in the manufacture of instruments for private aircraft. If personal airplanes are to be built and used in large numbers, and if the industry is to grow as it should—and as it can—certain quality standards must be maintained. The airplane is not the vehicle with which to experiment in order to determine how cheap an instrument one can get by with. An inaccurate or unreliable instrument is worse than none at all. Quality will never be subordinated to price in any Kollman instrument.

Our new Scout line of instruments for personal airplanes—at prices well within the reach of the private flyer—was made possible by re-designing the standard airtight and military instruments to the performance requirements of the private plane. Their ruggedness, accuracy and trustworthiness can be depended upon for the safety and utility of private aircraft.

Thus, then, is our policy for the future in the manufacture of aeronautical instruments. We believe it will contribute much to the healthy growth of the industry.

E. Lautman
Vice President, Export Division
General Manager, Kollman Instruments Division

KOLLMAN INSTRUMENT DIVISION OF MAURICE D COMPANY, 60-48 420 AVENUE, BAYSHORE, N. Y.

toughest landing gear in the industry. You land safely because you have full control under all conditions."

Instruction—Plane pictured and described as the Taylorcraft Two-seater, (two-place side-by-side) offered at \$2,395 including eight hours free flying instruction enough to teach you to "fly." The price is based on delivery at the factory at Alliance, Ohio, with the inference that shipping charges to New York are extra. The plane may be purchased on Gurnier's easy payment plan, one-third down and the balance including service charge, in monthly payments.

Porter H. Adams Dies; One of NAA Founders

Porter H. Adams, 51, a founder of the National Aeronautic Association and a long-time leader in many phases of aviation, died recently at his home in Boston, Mass., after a long illness.

Mr. Adams became active in aviation before the World War I and in 1918 was associated with Donald Douglas in the first proposed for a world flight. He served in the Navy in World War I. He was a former president and one-time chairman of the executive committee of NAA. He also had been president of Northeast University, from which post he retired because of illness four years ago, although retaining the title of president emeritus, and continuing to hold the James Jackson Cabot professorship of air traffic regulation and air transportation.

NACA Work—He had been associated on special research with the National Advisory Committee for Aeronautics, was a U.S. representative at several international aviation conferences and was an inventor of aeronautical devices and research techniques.

Fort Worth Air Show

Fort Worth, Tex., is making plans for its Southwestern Aviation Exposition to be held March 8-16, the same time as the Southwest Exposition and Fat Stock Show. Two former Texas flyers, R. W. (Bob) Castle, Fort Worth NAA chapter president, and Seth Barwise, have been named president and vice-president of the air show. Plans are being made to organize "aircades" of visiting flyers from Southwestern states to attend the exposition.

Alexander McMurtry

Briefing For Private Flying

The revised Republic Seabee amphibian, complete with 215-hp engine is due for an early showing in New York. An interesting fact about the plane is that the hull does not protrude into the water, whereas the former version had full cutaway wings. Main purpose of the struts, however, holding the wing up is to keep the plane occupants from striking the floor of the doors and walking back into the path of the piston propeller. The revised design also has enabled Republic to subtract a few more parts from the wing structure, following the company's general philosophy of simplifying design wherever possible without interfering with strength or efficiency.

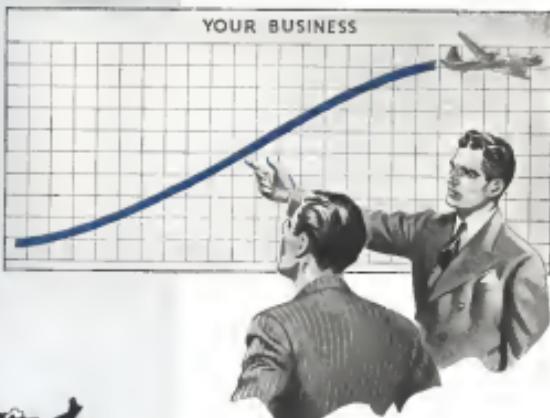
COLONETTER—A 24-year-old AAF veteran, Daniel Cekalukha, now an aeronautical engineering student at Parks Air College, has developed a new stall warning indicator which he has called the Colonetter. The device blows a warning horn and flashes a red light on the instrument panel when the plane approaches a stall position. The inventor says his device will anticipate stalls on level and climbing turns and at high speeds as well as stalls during takeoff. Operating principle of the device has not been disclosed. The CAA has conducted tests with a number of other types of stall indicators.

"SIMPLIFY" CONTROL—Al Mooney's new "Simplify" control arrangement on Culver Model V, is reported to be a major improvement by some people who have seen the plane. The Culver Corp. says all the pilot has to do is "Set the dial for takeoff or 'low gear,' advance the throttle and the ship takes off. Throw it to 'second gear' or climb and the airplane climbs at optimum altitude. Put it in 'high' or set the dial for cruise and the airplane levels out at cruising. The landing is just as simple." Unofficial reports peg the Model V top speed at better than 140 mph. and the cruising speed at 130 to 138 mph., although the company has not yet announced definite performance figures.

IF YOU MUST CRASH—Instructions by the Aero Insurance Underwriters engineering department on what to do to reduce the hazards of a forced or crash landing are reproduced here for the careful study of every flyer who reads these pages:

"Try to dissipate the energy of the aircraft by taking the shock of the impact on the wing if possible. The ideal situation would be for the pilot to fly between two poles or trees which would shear off the wings, allowing the fuselage to come to a gradual stop. The airplane should be landed at a speed which assures the pilot sufficient control so that he can do whatever is necessary at the last moment. This usually will mean that forced landings will be made above stalling speed although there may be times when it might be preferable to stall in. Prior to landing the pilot should caution passengers to remove their eye glasses and to smoke (a pipe is especially dangerous), put any available soft objects such as pillows, coats, ahead of them, flatten seat belts, fold over arms over heads, if available use a Safety harness, take all sharp objects out of pockets, open all cockpit windows to aid in escape."

AIRPORT RESTRICTIONS—A tendency on the part of some airport managers is to bar private flying, regardless of the ability of the pilot or the type of plane, from his airport to restrict it so airplane use is not in the best interests of aviation generally. It was encouraging to see the recent National Aviation Clinic at Oklahoma City urge a resolution urging that managerial airport management, "distinguish between transient and transportation personal flying and transient or private flying." Many private flyers who use their planes for cross-country operation are just as good or better than some of the airline pilots. And some of the private planes are fully equipped for instructional operation. But even if the pilots are not experts and even if the planes are not up to airline standards, the transient pilot is several steps above the student pilot and should receive much more consideration. Washington National Airport, one of the busiest in the country, doesn't hesitate to bring in private planes, if the pilots notify the tower in advance, either by radio, or by telephoning in from another airport. And if Washington can do it, there isn't much reason for any other field to bar transients.

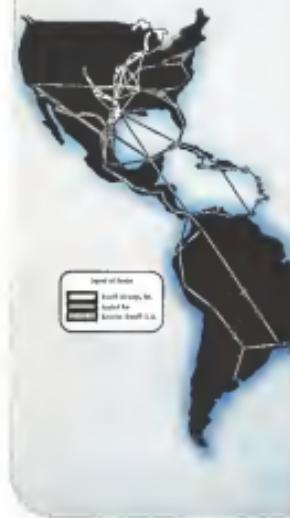


WANT MORE Business?

More business is simply a matter of meeting more people more often. When you can get to your destination quicker, you go more frequently, or stay longer, or both.

The result? More business.

This is true wherever your business may be situated. Braniff's proposal for a coordinated airline system in the Western Hemisphere will bring sources of business closer. It will mean more business, will aid full employment and prosperity throughout the Americas.



BRANIFF AIRWAYS



Spratt Flying Boat Sketch of the little-known Spratt Controllable-Wing flying boat in its second edition, shows a true hydroplane with simple propeller shaft arrangement, similar to many boats to that used as an ordinary water boat. The propeller tips operate only a few inches above the water level, but are shielded by the bottom of the boat. The Skygiant II is another of the controllable-wing experimental planes developed by Spratt and the Mathis division of Consolidated Vultee.

Spratt Flying Boat Has Simple Prop

The pusher propeller installation in the latest Spratt Controllable-Wing flying boat developed by George Spratt and the Nashville division of Consolidated Vultee is made possible by an extremely simple propeller shaft arrangement, comparable to the shaft used on an ordinary motor boat, the inventor has disclosed.

"It is even more simple, not even a stuffing box is required," Spratt told *Airways News*. "For many years the boat builder has shifted the engine down at the rear and continued a shaft in line with the crankshaft down through the bottom of the hull far enough to obtain propeller clearance. It would have been the usual natural measure for the flying boat builder to leave the engine where it is and slope the rear up and continue the shaft to the air propeller. The shaft can be smaller and lighter as the shaft size is usually determined by its resistance to striking submerged objects. This hazard is much less with an air propeller."

Operation—Like the four-wheel-led landplane previously announced, the Skygiant II, is flown by "tilting" the wing, in relation to the fuselage. Spratt reports that the 74-in. shaft in the Skygiant has given over 200 hours of trouble-free operation. With a working stress under 16,000 lbs per square inch, it transmits 70 hp. to a 40-in. propeller having 2,800 rpm.

On one flying boat version Spratt has used a single control

arrangement successfully, due to the unusual flying characteristics of the wing.

Airpark Permit Suit Reinstated In Florida

Florida Supreme Court recently reinstated a suit by which Carl Stengel seeks to compel the Dade County Commissioners to permit him to use a strip of property for a landing field.

Judge Elwyn Thomas commented: "In any義astrophological emergency the drawing of airplane motors is almost certain and obviously aircraft bearing passengers, mail, and freight in and out of cities could not operate their approaches and departures confined to territory uninhabited and untraversed by roads and highways." He said it was difficult to adopt the view of the Dade County Commissioners that the suburban airport should not be operated because of the

possible effect on safety and general welfare.

► **Zoning**—Stengel's land is near a highway nine miles from downtown Miami. Only part of it is in a zone in which airports are permitted. The Dade County Commission declined to follow a county zoning director's recommendation that the permit be granted. Stengel filed suit, but the Circuit Court dismissed his bill of complaint.

Injection Carburetion Offered For Light Planes

Injection carburetion is made available probably for the first time to the light airplane in the new PS series of Stromberg carburetors announced by Bendix Products division, Bendix Aviation Corp., South Bend, Ind.

No-surge characteristics, freedom from gravity effects in dives, climbs and berths, automatic compensation for temperature and altitude effects and accurate prediction of fuel consumption are cited as advantages of the new type carburetor developed from those used on virtually all military planes during the war.

The PS series includes carburetors for engines ranging from 50 to 500 hp. The single-barrelled floatless carburetor may be installed in any position for updraft, down draft or horizontal operation, the manufacturer states. It provides a closed and pressurized fuel feed system from fuel pump to discharge nozzle.

The venture screen only to compensate pressure differentials for non-uniform fuel quantity. When discharge pressure drops below three lbs per square inch, fuel leakage past the nozzle is prevented by closing a spring loaded valve.

Spins, Stalls Cause ½ Of Deaths

One-third of all fatalities suffered in non-air carrier aviation accidents in 1944 were attributed to spins or stalls, giving additional support to the arguments for spin and stall recovery for personal planes, which will tend to negate these hazards.

A summary prepared by the Civil Aeronautics Board states that of a total of 100 fatal accidents reported, 63 resulted from spins or stalls; the largest single kill taken by any type of accident: On 225 spin-and-stall

analyses the effect of the various types of accident by damage to plane showed that spins and stalls caused 520 "wreckage"—48 overhauls, and 37 major assembly repairs.

Pesco MOTOR DRIVEN HYDRAULIC PUMPS



PESCO Motor Driven Feathering Pump
Complaint: 4 in. dia. 7000 psi. 12.5 rpm. 1/2 hp.
P.E. Pressure: 1000 psi. 12.5 rpm.
Temperature: -40° to +140° F. Max.
Shaft length: 14.4 in. Max.
Shaft weight: 34-lbs. d.t. 5-1/2 ft.

Planes by tens of thousands of hours of the rough-and-tumble of war flying, PESCO Feathering Pumps have set a record for performance and dependability that is unequalled. The newest model (illustrated above) has been developed by PESCO engineers to provide a compact, modern hydraulic pump unit for propeller feathering that responds by remote control, with split-second readiness, to the pilot's wishes.

This pump is typical of the many motor driven hydraulic pumps that PESCO has developed for auxiliary operation of aircraft parts. All of them feature Pressure Loading, an exclusive PESCO

development that compensates for wear and the thermal variations brought about by the wide range of altitudes and temperatures through which these pumps must operate. Pressure Loading automatically maintains minimum clearance between pump gears and gear housing, making possible continuous high operating efficiencies under all conditions.

Write for descriptive folder on Motor Driven Hydraulic Pumps to PESCO Products Co. (Division Borg-Warner), 11610 Euclid Avenue, Cleveland 6, Ohio.



PRODUCTION

U.S. Aircraft Industry Can Learn Little From German Methods

Enemy's high production rate was sustained by vast pool of slave labor in face of inferior practices, Navy investigators report; American training techniques not followed.

There is little the U. S. aircraft industry can learn from studying German wartime production methods and techniques, it is indicated by informed sources here concerning available. The best German production techniques do not degenerate into inferior practices only by the tremendous pool of slave labor.

The amount of labor at hand was employed particularly to make up a deficiency in the utilization of work-handling machinery. There was a complete absence of conveyor systems in 13 aircraft and parts plants surveyed by U. S. Naval aircraft production officers. Small hand trucks were used, but large parts were carried in pairs. While this system slowed down the entire work, there is evidence, the Navy report states, that the Germans did not include the time consumed in handling in the number of hours required to turn out a particular item.

Tooling.—Another marked difference between the procedures in Germany and in this country was the extent of the employment of special tooling by U. S. manufacturers.



BEECHCRAFT PRODUCTION LINE:

New Beech D18S feeder transports (AVIATION NEWS, Dec. 10) are coming off this production line at the firm's Wichita, Kans., plant. The plane successor to the 8-11 place transport built before the war, cruises at 180 mph with a top speed of 225 mph at 5,000 ft. Another model, the D18C cruises at 200 mph.

New Type Parachute

Development of a new type of parachute harness is reported by the Flanner Private Co., Minneapolis. It consists of a harness with a quick fitting and can be easily adjusted as any wearer in three seconds, regardless of his size or weight.

The company says it estimates the harness will require no more than 10 minutes adjustment when worn by different-sized people. Chest and leg straps are strapped in the usual way. Then, a tag at leg and chest straps automatically draws the harness to a perfect fit. It is easily loosened by a tag at the chest and leg straps.

An advantage pointed out is that the new harness may be released for combat while in flight and instantly tightened in case of emergency. In addition it is not necessary to open the harness to release the parachute outside the plane. This can be accomplished in the seat with the wearer in a sitting position.

could not be turned out in that time. These highly skilled workers were protected from military service until the very last stages of the war.

It was because of these mechanisms, it is believed, that the Germans were able so quickly to make modifications on production lines, and owing this predilection of new models.

German aircraft types, to a large extent, were keyed to production means. They were designed for easy production. It is pointed out, while "American designs were, by comparison, unsuited to large-scale manufacture at reasonable cost." Some of the German designs could be produced much more easily and rapidly than similar products of the U. S. design. There seemed to be plenty of machine tools and of good quality.

Jigs Checked.—Another device employed by the Germans to obtain quality production, despite wide dispersal, was found by AAP investigators. Interchangeability of components was assured by "referencing" the jigs at various plants to gauges which were duplicates of a master. Each plant had its own duplicates which periodically were checked against the masters. These master gauges were carefully guarded at a location not disclosed.

AIRCRAFT INSTRUMENTS

by GENERAL ELECTRIC



Magnetic-drag Tachometers

For the measurement of aircraft-engine speed, more than half a million tachometer indicators and generators have been supplied to the armed forces alone by General Electric. (Additional thousands were built to G-E drawings by other manufacturing firms.) Naturally, this achievement is met demand reflects outstanding performance.

RELIABILITY.—Less than one out of every thousand instruments shipped from the factory has been returned because of malfunctions.

SIMPLICITY.—An instrument with a full-scale reading of 3,000 rpm indicates within plus or minus 18 rpm on the operating range.

VARIETY.—These instruments are available in a variety of ratings.



GENERATORS



GENERAL ELECTRIC

OTHER TYPES OF G-E AIRCRAFT INSTRUMENTS

Amperes and voltmeters

Position-indicating equipment

Pressure-indicating equipment

Temperature-indicating equipment

Liquid-level-indicating equipment

Humidity-indicating equipment

Electric generators

■ An explanation of the magnetic-drag principle and its application is contained in Booklet No. 1000, "Magnetic-drag Instruments," available from your local agent, distributor or write to Apparatus Department, General Electric Co., Schenectady 2, N. Y.



German production techniques, however, had three serious major faults.

While great study was devoted to new designs and weapons, there was little thought or consideration given to problems of production. Additionally, administrators of production by the government apparently bogged down worse in Germany than it did at times in this country. One plant manager stated it required a year for final contract approval.

Plant working Little use was made of scientific lighting and the level of illumination in German plants generally was less than half of the minimum considered essential in the U. S. The greatest "bug" was in handling of labor. While the multitude of slave labor was freed as such, even the German worker did not fare too well. The working day was eight hours, seven days a week and plant conditions far below those in this country. Very short meal periods were granted, and no provisions made for days off or for recreation.

2,500-hp. Engine Built By Chrysler

Production of a liquid-cooled, 3,500-hp engine of unusually light weight for theAAF has been reviewed by Chrysler Corp. Although designed for mass production, and tested in a specially rebuilt P-47, final development on the engine was too far along for it to be put into production for war use.

A 16-cylinder, inverted V-type,



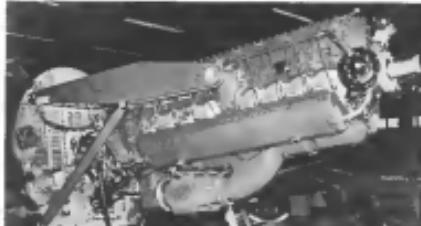
Novel "Thunderbell": This tapered-nose P-47 was specially rebuilt to test 2,500 hp liquid-cooled Chrysler engine. Small frontal area of the engine made possible sleeker lines, better visibility for the pilot.

the engine weighs 2,450 lb. less than one pound per horsepower, and while 10 ft. 5 in. long, is but 33 in. in diameter. It powered the P-47 at speeds "approaching" 390 mph.

Other Uses.—While engineered for use in fighter planes, the engine's small frontal area makes it useful for multi-engine aircraft, the company asserts, because it could be almost completely buried in the wings and afford a great reduction in drag.

Design studies on the engine began in May, 1940, and the first engine was delivered to the Air Technical Service Command in January, 1945.

Details.—Built with an eye to speedy mass production, the engine employs a two-piece crankshaft, bolted together at the reduction gear junction. This also



Chrysler Earls: Size of the 3,500-hp. liquid-cooled engine developed for the AAF is illustrated in the view of its mounting in a specially-rebuilt P-47 fighter. With a weight of less than one lb. per horsepower, the engine has a length of ten ft., but a diameter of only 33 in. It has powered the Thunderbolt at altitudes of 30,000 ft. and speeds near 500 mph.

Private
pilots
are
Looking
ahead
WITH
LEAR



Everyone is anxious to know what the future holds in store for private aviation.

Lear
Experiments and Research
Institute. The new Learjet will take off quickly, climb fast, cruise at 120 miles an hour. It will be spacious and roomy—just wide enough for easy to learn. And, of course, Learjet will be recommended. As soon as possible, it is due.

"Our experience with Learjet has been extremely satisfactory from the start. That is why we have recommended it to fliers over the past five years and have made provision for its installation in the instrument panel."

Lear has been building fine radio instruments and direction-finding equipment since 1920. For a long time, all production was directed for government accounts, but now, the outstanding instruments produced by Lear are open to all aviators. As the result of wartime experience and development, they will be better and more reliable than ever before.

LE-IR, Experiments
Radio Division, White Rock, Michigan,
Aerospace Radio Sales: Atlanta, Georgia, New
York, Chicago, Detroit, St. Louis, Indianapolis, Los
Angeles, San Francisco, Seattle, Portland, Long
Beach, Calif., 1620 W. Highland Ave.,
Los Angeles, Calif.

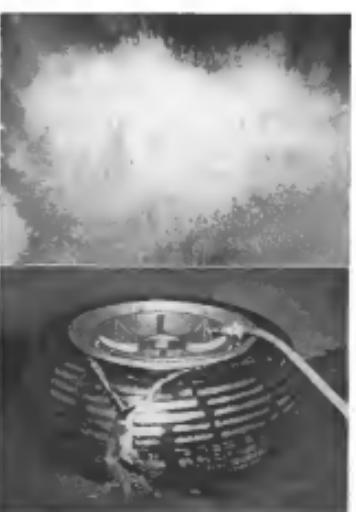
Everyone is anxious to know what the future holds in store for private aviation.

Torture chamber for tires means safer landings for planes . . .



HOW MANY LANDINGS?

B. F. Goodrich counts the landings on the "tire torture field" where Airplane Silvertowns are run to destruction to be sure they are more than just "up to standard."



BEST TEST! Wear is tested on a B. F. Goodrich tire. The pressure remains...up to many times that recommended at service. Finally (top picture) the tire bursts...it is completely ruined as the second picture shows. Gauges record the story at a wide margin of safety.



WHAT ABOUT BRUDE RESISTANCE? Here's the test that finds out! The tire is forced down over a steel rod under steadily increasing pressure. Brute, strenuous wall stretching has to give. And the poor machine looks to still further developments for greater tire safety.

**B. F. Goodrich Silvertowns
prove they can take it
before they take off**

LANDINGS are big moments in airplane lives...moments when they have to take the shock of many tons multiplied by plenty m.p.h. If they're B. F. Goodrich Silvertowns, they're ready to take it...with lots to spare. Shown here are some of the reasons why.

B. F. Goodrich technicians "land" tires inside a building. They're smacked down with great force against a high-speed dynamometer and braked until the multi-ton flywheel comes to a stop. This "landing" is repeated time and again with careful wear and performance checks all the way.

Then there are tests for bruise resistance, heat resistance, fatigue resistance, and others— altogether a "tire torture chamber" for tires. These are some of the ways B. F. Goodrich makes sure Airplane Silvertowns are kept up to tomorrow's standards—always ready for the new and heavier demands of larger and faster planes. *The B. F. Goodrich Company, Aeromarine Division, Akron, Ohio.*



Skyway or Highway

B.F. Goodrich

FIRST IN RUBBER

Six New Transports Flown in Britain

Extent of British commercial transport production is emphasized in the report of the Society of British Aircraft Constructors that of the new British post-war airliners now being developed, six already have flown, two others will fly before the end of the month, two are in the production stage and seven nearing completion.

In less than four months since the end of the war with Japan, the British aircraft industry has made impressive strides in adapting itself to peacetime production. The plants still are working on unfinished military orders and government control is still in force. **British Competition**—The Society comments that "the manufacturers are at a distinct disadvantage in not having competitive buyers for their products in their own country," with one overseas airline operating organization managing the only buyer in the home market for British transports.

This position has deteriorated in the viewpoint of the manufacturers by the fact that the overseas market has been obliged to use aircraft not of British origin. Operating heads, cognizant of the fact that staffs, flying crews and maintenance units have several years of experience on craft now being used, are disinclined to change to British planes.

Boeing Surplus Sale

Begins this week, Boeing Aircraft is offering commercially surplus aircraft materials for sale at reduced prices at the plant, at Seattle. Terms are in Seattle. No items will be sold for more than cost, and discounts will be given on the larger sales. Even N. Nielsen, Boeing assistant manager, says:

RCAF Orders Jets

Canadian-designed and built jet aircraft have been ordered for the Royal Canadian Air Force from A. V. Roe Canada Ltd. The aircraft will be constructed at the former Morane Plant of Victory Aircraft. Neither engine nor aircraft are completely designed yet, but RCAF is cooperating with Turbo-Beaver, Ltd., in the development of a jet unit for the new airplane.

Pennington—A change is taking place, however. On last Dec. 31, of the total fleet of the British Overseas Airways only 41 percent were of British make. By August, the percentage of British-built aircraft had increased to 53 percent.

Delivery of Lancasters and Yorks allocated to BOAC is expected within eight months. The Vickers Viking, 21-passenger twin-engine medium range plane is built and flying. The prototype of the de Havilland Dove, 8-11 passenger four-beam line plane has flown and should be in production early in the year.

Among the larger aircraft, the Avro York and the Avro Tudor I, four-engine planes, are in production. The Tudor II, designed for transatlantic service, is nearing completion. Also in the larger class is the Short Sandringham, 24-passenger, four-engines flying boat for the Rangoon route. The prototype is expected to be flying within the next few weeks.

Aircraft Problem Detailed By SPA

Confirming previous estimates from official sources that have been detailed in Aviation News, Surgeon General's Property Administration has reported to Congress that the problem of the disposition of surplus components and parts "are the most difficult in the whole sphere of aircraft disposal."

By next June, SPA stated, components and parts surplus may be as high as \$45,000,000,000 of original cost. That would not include any items salvaged from unusable aircraft! Of the total, about \$2,000,000,000 would be in 72,400 engines and their spare parts. Only about 11,500 of those engines could be considered suitable for civil use.

Where a single sale covers an entire lot, there will be an additional 10 percent mark down. Used goods, other than equipment, will be sold at 50 percent discount on cost.

Totals—Overall, SPA reported,

the Government investment in surplus aircraft and parts will approximate \$17,500,000,000, a higher figure than previously estimated. About 85 percent of the investment will be in tactical planes having no civilian applications. More than 90 percent of the aircraft components and parts will be unsuitable for civilian use, it is estimated.

SPA's breakdown puts the total number of planes at 117,338. Of that total, 84,188, with an original cost of \$11,500,000,000, will be tactical planes, 16,390 costing \$1,490,000,000 will be transport types, and 17,470 costing \$161,000,000 will be suitable for civilian planes. Roughly 90 percent of these aircraft is located in the U.S.

Dr. Durand Wins Top ASME Award

Dr. William F. Durand, member of the National Advisory Committee for Aerodynamics and professor emeritus of mechanical engineering at Stanford University, has been awarded the American Society of Mechanical Engineers' Medal, the organization's highest honor, for his work on the development of jet propulsion.

Dr. Durand headed the NACA committee which conducted the original research in this country on jet propulsion.

► Another ASME award, the Harry Medal, was given to Dr. Samuel M. Del Mar, General Electric engineer, for his contributions to the development of turbosuperchargers. Bruce E. Del Mar, Douglas Aircraft Co. engineer, received the junior award for a paper presented at the Society's annual meeting.

C-82 Orders Give Fairchild \$80,000,000 Backlog

Booking of Fairchild Engine & Airplane Corp. new is \$80,000,000, most of it in military orders for the C-82. President J. Christian Ward has announced. Despite this, 1945 sales and earnings are expected to be considerably below 1944 figures, he stated.

The company is paying a 30-cent dividend on common stock on Dec. 28, and a semi-annual dividend of \$1.25 per share on the \$2.50 cumulative preferred stock on Jan. 1. The dividend on the common is the third paid by the corporation, others being declared in 1943 and 1944.

Auto-Lite

EQUIPMENT FOR AIRCRAFT

Wherever Allied fighting planes are flying you'll find electrical equipment precision-built by Auto-Lite. Its quality proved in the tough test of combat — equipment resulting from long years of careful development and research. Pictured here are a few examples of such equipment.

THE ELECTRIC AUTO-LITE COMPANY
TOLEDO 1, OHIO SARNIA, ONTARIO



These great spark plug features: (1) Direct contact non-insulated nozzle located in the best position in plug; (2) Easy driven nut; (3) Plug center electrode; (4) Improved copper coated outer electrode; (5) High Dielectric strength and superior mechanical properties of "Duramold." Auto-Lite's resistor material.



Auto-Lite batteries are available in both 12 volt and 24 volt types. All are equipped with special non-spill type electrolyte and are housed in rugged, shock-proof, reinforced aluminum containers. The heavy duty battery has a capacity of 165 AH at 2 hr. rate; other battery capacity of 34 AH at the 5 hr. rate.



Auto-Lite relays are available for both continuous and intermittent duty. They more than meet the most exacting Government requirements. Auto-Lite also offers a wide variety of standard and special relays for aircraft use.



The 5 mm. high tension ignition cable (left) has stainless steel conductor, rubber insulation, glass braid, neoprene shield. Vega Chromalox magnet wire (right) has a high temperature rating of 200 degrees F. The magnet wire (right) has a special enamel with ohm resistance 2 times that of conventional enamel wire.

AUTO-LITE

TUNE IN THE AUTO-LITE KERO SHOW STARRING DICK HAYNES — SATURDAYS 8:00 P.M. — E.T. ON CBS-TV

PERSONNEL

CAA Appoints Warlick Regional Counsellor

Major John F. Warlick (photo) has been appointed regional counsellor for the Civil Aviation Administration Administration. Warlick, who recently was discharged from the Air Force division of AAF, will be based at Kansas City between A. G. Koch, assistant administrator for field operations, and the regional offices. Before joining the AAP Warlick was with the Region 1 office in Chicago. He joined the Aviation Branch of the Commerce Department as a junior aeronautical engineer. In 1938 he was appointed technical assistant to the director of safety regulation of CAA.

W. E. Larned has returned to United Air Lines from the Navy. After a familiarization program he will assume the position of assistant superintendent of systems flight operations. Larned was selected in 1943 to fly the late Secretary of the Navy Frank Knox on an inspection tour of the European war theater and wears the Secretary of the Navy citation ribbon.

W. Thorne Basses (photo) has been released from active duty in the Navy and has returned to American Airlines as regional agency manager for the western states and Pacific areas. Basses has been with American for 34 years. During the war he was transportation officer on the staff of the commander, Naval Air Transport Service, Pacific Wing, Atlantic Wing, and West Coast Wing.

Cpl. Jess H. Benoitz, former sales executive for Col. G. H. Publishing Co., joined British Airways as director of research and planning after five years of active military duty. A veteran of World War I and chairman of the magazine committee for the Reserve Officers Association, Col. Benoitz was called in duty in 1940 to write a series of articles outlining the War Depart-

ment's program for reserve officers. He has many pastures in the AAP.

Donald M. Lutkus, formerly executive manager to the general manager of the National Aircraft War Production Council, announces the opening of law offices in Washington, D. C., and will be based at North American.

Comdr. Thomas M. Jones has been named a vice-president of the Air Power League. Comdr. Jones was retired from the Navy in 1938 and has been active in aviation since 1938. He was assistant operations manager for American Export Airlines from 1938 to 1941 and returned back to active duty in the aviation planning division of the Office of Chief of Naval Operations.

Luther L. Kellieg (photo) has been named assistant to the regional test manager for the aircraft division of TACA. Major Kellieg formerly was assistant general traffic manager of Air Cargo Transport and Standard Airlines of New York. Col. William S. McNamee has been named a vice-president of TACA. Col. McNamee was in charge of AAP procurement activities during the war at all Ford plants in Detroit and later for the eastern district at New York for Air Technical Service Command.

Maj. Gerald M. Smith has been named executive assistant by TACA Airways, to work on administrative matters. Smith has been with the AAP Air Transport Command service on the "Hump" operation. He later served as chief of staff to Gen. Thomas G. Hardin, now executive vice-president of TACA.

William Clark, assistant to Col. William Hardin, director of information for the surplus aircraft disposal program, has resigned to return to U. S. News where he will be associated with the new publication, *World Report*, a weekly magazine. Clark was with the Coordinator of Inter-American Affairs for three years before joining Col. Hardin.



Theodore C. Callesca (photo), who recently resigned as vice-president in charge of sales of Northrop Aircraft Corp., has accepted an assignment as advisor to the president for Soc. Pauls, Brazil, to found his own business there. He has been named South American distributor for Northrop Aeroplane division of Northrop and South American representatives of Northrop Aeronautical Institute. He also expects to establish an aircraft service and maintenance base in Brazil.

Henry E. Guerin (photo), airplane manufacturing executive and investor, is returning from Douglas Aircraft Co. after 20 years service. For the last five years Guerin has been a plant manager of the Santa Monica factory. Starting as a machinist, Guerin was one of the three men originally associated with Donald W. Douglas in 1920 in forming the company.

Capt. H. C. Kristoffersen has been released from the AAP where he served as assistant chief of staff, ATC headquarters, to become operations manager, Pacific Airlines division. **P. J. Stadman**, Annex II succeeds Capt. G. J. Stadman who has been transferred to a similar position in Pan Am's Latin American division. Other PAA appointments include: R. E. Barnes, formerly industrial relations manager; A. A. Akle, director of advertising; G. E. Smith, assistant manager to the division manager; **Frank M. Hall**, formerly section maintenance superintendent, Honolulu, as industrial relations manager; and S. D. Brothers, director sales manager of Manila prior to his appointment as Pan Am's sales manager. **Frederick J. Johnson**, divisional sales manager; **E. M. Balmer**, passenger traffic superintendent; **S. B. Smith** has been named division sales manager; **E. M. Balmer**, passenger traffic superintendent; **S. P. Fuchs**, division express mail superintendent and **Edgarton Scott**, division reservations superintendent.

R. Humberto Urrutia has been named publicity assistant for TACA Airways Agency, Inc. Urrutia will have charge of agency publicity for Latin America countries. He is a former newspaperman in South America. He served in the U. S. Army during the war.

KOPPERS PISTON RINGS

help set records

The American Hammered Piston Ring Division of Koppers produces rings which have helped Flying Fortress, fighters, patrol bombers, observation planes and transports to set new performance records. With the patented "Piston-Krene" process, Koppers goes through a hard-line hammering operation plating which still has some and can hold oil to keep the cylinder wall lubricated.

(See our Hammer Process)



Termoc chosen for Airport Paving

For years, Koppers Termoc has been a familiar friend and standby to thousands of highway officials who know it for the short-maturity, long-wearing, economical highway surface it makes. To airport officials, it is proving just as valuable for runways, aprons, taxiways, parking areas and approach roads.



The roof of tomorrow was here yesterday

Some of the finest roof records for long life and lack of expense have been built up over the past half century by roofs of coal tar pitch. In spite of the many improvements which have been discovered or developed during the war, no one has been able to find any roofing that is better able to withstand years and weather than these coal tar materials. That is why so many "roofs of concern" like those on airport buildings are being built of Koppers Coal Tar Pitch and felt.

Buy VICTORY BONDS — and keep them!

KOPPERS

THE INDUSTRY THAT SERVES AN INDUSTRY

Koppers Company, Inc., Pittsburgh 19, Pa.

FINANCIAL

TWA Loan Definitely Establishes Financial Maturity Of Airlines

Credit agreement with Equitable Life Assurance Society is largest ever swung by any air carrier, is unsecured and avoids dilution of the existing equity.

Airline financing took a long stride forward when Transcontinental & Western Air, Inc., recently sold \$30,000,000 in 3 percent debentures to the Equitable Life Assurance Society of the U.S. This loan was noteworthy as it definitely establishes the financial maturity of the air transport industry and the ease with which it can now secure credit. It is particularly significant that in the past loans of this character were extended only to those companies with backgrounds of stable earnings and unbroken security. TWA has the most enviable earnings record among the "big four" of the airlines and has embarked on a huge expansion program.

This credit assumes additional importance for a number of other reasons. It represents the largest amount of money made available to any airline at one time. It is unsecured and permits the creation of prior debt debt. It avoids the dilution of the existing equity. **Other Deals**—The largest previous debt financing took place when PCA marketed \$10,000,000 in convertible 3½ percent debentures in September. Top place in equity financing went to United Air Lines when it sold slightly more than \$10,000,000 in 4½ percent convertible preferred stock back in January, 1944.

In the past, airline loans designed to finance equipment purchases were usually secured by some form of chattel mortgage or equipment trust arrangement. Pan American and American acquired a substantial proportion of their equipment in this fashion. TWA, as recently reported, emerged from an experimental \$1,700,000 loan secured by a charter mortgage on its five rebuilt Superliners. This loan was based upon 55 percent of the

net depreciated cost of the colt liner, with interest averaging 1½ percent for the five-year period.

Purpose—The current TWA loan will be used to finance the purchase of 26 Constellation aircraft as it is expected that the obligation will be liquidated through earnings generated by this equipment. At least, depreciation charges on these planes, if covered by operating revenues, should facilitate the retirement of this credit. This undoubtedly behind the soaring sinking fund requirement of \$8,000,000 a year, starting with June 1, 1947. The company has the option of increasing this retirement to \$4,000,000 a year.

Previous large-scale sale of airline debentures and preferred stocks to the public necessitated considerable "investing." The chief attraction reposed in the conversion privilege. Even the PCA income debentures have the characteristic of a preferred stock rather than that of a bond. Ultimately these forms of convertible securities become common stock. As a result, considerable dilution of the equity takes place. Yet, prior to the current TWA deal, it was virtually impossible to market a straight orthodox preferred stock or debenture issue of an airline.

Future—For this reason, the TWA loan represents a subtle financing on the part of the airline. The existing equity will avoid dilution and any net earnings will accrue to the stockholders. The Hughes Tool Co. was last reported as owning 442,000 shares of 4½ percent of the total TWA stock. Perhaps it was this potent ownership interest which served as one of the strong arguments encouraging the insurance company to extend the loan.

The airlines are now enjoying high fever in the investment and speculative markets and should experience little difficulty in obtaining the required funds under existing circumstances. For profit it is only necessary to look at the level of airline share prices and the nature of TWA's current issuance loan.

Can you use SCRIVETS?



NEW!

The Real SCRIVET
permits the instant
joining of two metal
parts without assembly.

Double thread technology is
patented.



Patented
SCRIVET
fastener
permits
instant
joining
without
assembly.

SCRIVETS® are a new and important development in the fastening field. A sort of combination screw and rivet, the SCRIVET is driven like a screw, but it looks and can't come out. Ideal for easy, rapid and permanent assembly.

1. Holds together permanently any two parts or sections.
2. Replaces sheet metal screw which might work loose (the SCRIVET has better holding power than a screw).
3. Replaces rivet which is often difficult or impossible to apply in close quarters. (The SCRIVET has not quite as good holding power as a regular rivet. Holds better than a blind rivet and costs much less.)

If you see possibilities of making good use of SCRIVETS on your work, let us hear from you. We'll gladly send samples and design a SCRIVET for your special requirements.



National
SCREW & MFG. CO.
CLEVELAND, OHIO

Patent Applied For. U.S. Pat. No. 2,811,112. 1948. J. G. SCHAFFER

THE NATIONAL SCREW & MFG. CO., CLEVELAND, O.



Horizons unlimited

WEAR does a Boeing engineer think about? Tell us one for ten minutes and his pen will start expressing the course law workings of his mind . . . in smooth, clear, bastered curves of heavier flow, stretching engine nacelles and sweeped tail fins.

For he is the kind of imagination that never rests. In the absorbing task of designing a new and better airplane he will stay at his desk days and nights without sleep. His figuring is in educational measurements, but he thinks in terms of the infinite. His horizon is unlimited.

Boeing engineers—more than 2,000 of them—translate the Army's dreams of a

super-booster into the power-making fact of the B-52. They put rolling of grinding into-horn into a brief that never ends the headlines but rarely affects the cause of beauty. Again and again they come up against black walls—stirred over—found ways to do what had been the impossible.

You can't stop such men. You can't suppress their fierce enthusiasm at their amazing technical skill. Now that the war is over, they'll go right on creating and improving appliances for the greater peace-time age of flight—the commercial transports and military aircraft that will make and keep America strong in the air.

Already the prototype of the first true super-transport—the Boeing Stratocruiser—has established new records for speed, performance and operating economy. Incorporated in its design are scores of aerodynamic and structural advances developed and proved in victory over Japan.

In peacetime days ahead, the special abilities are needed, design, engineering and management which have given Boeing leadership in the big booster field will bring you the Stratocruiser and other advancements in air transport. You can be sure that any airplane "built by Boeing" is built to last.

DEPARTMENT OF THE 330 SUPERBOMBER • THE FLYING CHAMPION • THE NEW STRATOCRUISER
THE RAIDER TRAINER • THE STATESTAFF • PAR AMERICAN CLIPPER

BOEING

SPECIAL AIR SERVICES

CHARTER

NON-SCHEDULED

INTRASTATE

Exemption As Common Carriers Asked for Pioneer Cargo Lines

U. S. Airlines attorney's presentation at CAB oral argument urges classification which would not subject companies to economic regulation until after notice and hearing.

Pioneering air freight carriers which already are flying could be exempted under the Civil Aeronautics Act as air cargo common carriers, which would permit them to operate on schedule. Under present conditions no non-scheduled carrier may operate without a certificate of public convenience and necessity from the CAB, a process which requires thousands of dollars and several years' time. The cargo operators now in service want no such a schedule.

This was the presentation to the Board in its recent oral argument on non-scheduled exemption as given by U. S. Airlines, Inc. The company's attorney, Albert Beitel, agreed with virtually all other operators of non-scheduled air services that the future of non-scheduled aviation can be assured best possible development if the Board will retain the present exemption order and keep regulation to an absolute minimum.

► **Prospects.**—Beitel added, however, that the Board considers a client-bought cargo terminal service, which would not be subject to Section 601—the economic regulations—of the act, valid after notice and hearing that further control is required. Air cargo carriers would be subject to all other applicable provisions of the act. This type of exemption, Beitel contends, permits a free passengering of the field, but also requires cargo carriers to comply with all of the provisions of the act except that requiring a certificate.

U. S. Airlines will transport fruits and vegetables from Florida to the northern industrial areas in Douglas C-47s, returning with manufactured and other goods. ► **Prospects.**—It now appears that the cargo field will be developed to perhaps a greater degree than the field of transporting passengers

on a non-scheduled basis," Beitel says. "Few, if any, of the new cargo lines will need small contracts or other government money, but will these carriers divert air express revenue from the presently operating airlines?"

"The air cargo carrier will transport quantity freight, not small express shipments," he asserts. The business the air cargo carrier will attract is new business, which has not heretofore moved by air except on a limited experimental scale.

► **Reifications.**—It is not easy to categorize an air cargo service under existing regulations. The places the cargo is purchased, carried and all available via air are not the same as the air express route. The non-scheduled exemption order does not set the air cargo carrier free to offer regular service, but the litigants want a regular service. The exemption order

sustains the carrier must either obtain a certificate of public convenience and necessity, or restrict his operations to those of a private carrier.

Even if an exemption is issued, some objection can be expected. This is because the Board has ruled that carrier is that application for other types of air service will be processed and handled as an exemption application unless the two or more have changed. However, U. S. Airlines does not know what the other types of air service are, so whether the routes should be designated by states or by areas. Nobody will know until the Board receives data based upon actual experience.

► **Implications.**—This was the situation when the United Air Freight Co., when it commenced air freight forwarding activities, was ordered to desist. The Board held that the company could not apply for a special exemption order as that could continue experimental operations and could not assume it would have been an unfair advantage to other operators.

The Universal Air Freight Co. had a similar problem when it began to haul packages of cargo, consolidated them, and shipped them at quantity rates. The Board held that the rates were higher than the air express rate. But they had to stick to operations.

► **Opposition.**—Universal had a similar experience. Freight forwarders went to the air all cargo service, but they were prohibited from doing so without a certificate of public convenience and necessity.

► **Opportunities.**—Universal stated the opportunities for cargo as a private contract carrier.

► **Conclusion.**—It is not easy to categorize an air cargo service under existing regulations. The places the cargo is purchased, carried and all available via air are not the same as the air express route. The non-scheduled exemption order does not set the air cargo carrier free to offer regular service, but the litigants want a regular service. The exemption order



PLAN AIR PICKUP IN COLOMBIA:

Equipped by All American Aviation, an Astro Avion, twin-engine craft, is going into pickup service in Colombia for Líneas Nacionales de Servicio Aéreo (Lasa) of Bogota. Arrangements for the negotiations were made by Capt. Ernesto Rebecchi and Maurice Obregon of Lasa on a trip to this country during which they traveled All American's pickup route (above). Left to right, Mrs. Malvina R. Barringer, retiring president of All American; Capt. Rebecchi and Mr. Obregon.

"Can a civilian air carrier make 15,000 or 18,000 different contracts? Naturally, he can't serve until after extensive litigation. More, the contracts will be so varied, so many, so intricate, that it will be difficult to determine what is or is not for our use." Most, they be in working as do real contracts under the law, and the right to do business may be denied by the application of certain standards. However, the Inter-American Air Conference has decided to differ on these issues. If they can not agree, it is reasonable to assume that the U.S. will be compelled to accept some of the questions, and not be wholly in accord with the opinions of the Board, and he may be compelled to withdraw the Act and putting himself out of business.

Possible Constitutionality. "There also is a question of whether the Act is constitutional, which should be taken into account. Private contract cargo service can now be provided, and the question is, does the field of air cargo and freight to the public the full advantages of the service. What is clear is that cargo services from foreign countries to the United States will probably be primarily that of a private carrier because a small cargo ship can be more easily converted into an airplane. As the service is used by a larger number of shippers of fresh fruit, vegetables, and other perishable goods, the service may be primarily that of a common carrier. There should be no doubt that the Act is constitutional, and the scope to whom the service will be available, the cost of the commodity. If a truly general cargo service is to be provided, cargo services should be made available to all shippers who desire to use them. The same terms will be available to all.

"When the aircraft returns to Florida with manufactured products, the operation will be considered to be that of a common carrier. The value of the manufactured goods available to the air cargo service will be determined by the service is made available to all of the manufacturers at the northern terminus. The service will be contained in the movement of those who purchase a substantial volume of manufactured articles irrespective of being served by air or by land. This will be true of individual companies. Additional cargo could be secured by increasing the number of passengers, and thus the use of the service. However, slight increase in the effect of putting the air cargo service in the category of a common carrier."

Suggestion. "It is difficult to conceive that the Act will have a great impact on civil aviation by encouraging air cargo operations. The best answer I can give is that the Act will not affect U.S. Airlines excepted of the fact that the Board established a classification of cargo. It is my opinion that cargo carriers can be readily defined as air carriers which engage solely in the carriage of property (except mail) by air."

"Then it was suggested that all air cargo carriers be compelled from the point of view of the Board to register and after the notice and hearing, the Board should then further rule, requiring all air cargo carriers to register."

"Air cargo carriers will be subject to all of the other applicable provisions of the Act. The type of regulation will be determined by the circumstances of the field. At the same time, it requires cargo carriers to comply with the Act, and not to discriminate against air cargo carriers except the obtaining of a certificate."

"There may be some cargo carriers who will be exempt from the Act, but the advantages of the same cargo carriers operations would lead most of the carriers to operate with the exemption rather than without the law."

Services Retaining Surplus Beechcrafts

The non-scheduled and charter industry has shown intense interest in any future plans of the Army and Navy to release or acquire some of the hundreds of surplus Beech transports which were built during the war. Surplus disposal authorities in Washington see little hope, however, that many of these popular ships will be released in the near future. The air services are utilizing them for personnel transport, and consider them in more demand than many Douglas' have been scrapped or turned over to surplus officials. The Beeches represent the only high speed, comfortable transports left at some installations.

Only 14 AT-6s have been declared surplus, and only six of these were turned over to RPC. Only 12 C-45s were declared, of which six were delivered and sold. CAA bought two of these.

Possible Use.—Another reason Army and Navy officers gave for holding these types is the professed intention of turning many over to whatever state guard system is to be established.

The only purchasers of AT-6s who are on record are Ralph P. Barnes, Atlanta, Ga.; James P. O'Brien, Bedford, N. H.; Frank Kurian, Albuquerque, N. M.; Fletcher A. Waters, Dallas; Tex Aero Corp., Atlanta; and Delano L. Mansfield, Grand Park, N. D.

Purchasers of C-45s are United Aero Services, Inc., Charlotte, N. C., three planes; Midwest Aviation Service, Oklahoma City, two; CAA, Washington, two.

C-47 Sales Indicate Many New Lines

A high percentage of individuals and companies purchasing or leasing surplus C-47 transports from Reconstruction Finance Corp. expect to set up non-scheduled cargo services, according to RPC officials.

The latest list of C-47 purchasers is considered the best index to new operations, some of which have not yet advertised or announced business plans. Following is the complete list of purchasers, except for U.S. scheduled airlines, whose transactions have already been published:

Air Cargo Transport Corp., Englewood, Colo.; six as rentals, one as outright.

Ray Parrish, Waldorf-Astoria Hotel, New York, one as outright.

Oliver Kishel (ANGLO), Boca Raton, Fla.; three, A, one bought.

Frank Murphy, St. Petersburg, Fla.; three, B.

Civil Aviation Administration, Washington, one as outright.

John Phillips, Los Angeles, Southern Airways, Atlanta, Ga., one bought.

Midwest Central Airways, P.O. Box 1000, Chicago, one bought.

Laura Baker, 24 Kingsbury Place, St. Louis, Mo., one bought.

Midwest Central, 2000 Valley Spring Lane, Tulsa, Okla., one bought on installation.

John E. Gandy, 1000 Main Ave., Rock Island, Ill., one bought.

Walter K. Jacobs, 5100 Danvers Avenue, Astoria, L. I., N.Y., one bought.

Carrollton, 1000 North Main Street, Edgewood, Md., one bought outright, two bought on installation.

Frank Murphy, Rio de Janeiro, Brazil, one bought.

U.S. AIRLINES, Inc. (Henry Flagler), Miami, Fla.; one as outright.

Netherlands Purchasing Company, 41 E. 53rd St., New York City, ten as outright.

Howard J. Kirby, Miami Springs, Fla., one bought on installation.

John C. Conroy, 1000 Wilshire Blvd., Calif., one as outright.

John C. Knapp Co., 800 S. Polkton St., Milwaukee, Wis., one bought on installation.

Foggs Airways, Inc., Rochester, N. Y., one bought.

John C. Conroy, 1000 S. Wilshire St., Los Angeles, Calif., one leased.

Tech Airways Agency, Inc., one leased.

Two others are bought outright, four are leased.

Leister-Kaufman Corp., 21 Lake St., Minneapolis, Minn., one as outright.

Western Air Express Co., Newark, N.J., one leased.

Trans-Canadian Air Cargo, Inc., Buffalo, N.Y., one bought on installation.

John Parker Marston, 1326 16th St., N.W., Washington, D.C., one bought.

Trans-Canada Air Lines, 1000 Lester Place, N.Y.C., two bought.

John Enterprises, Tulsa, Okla., one bought.

Craig & Co., 210 Madison, N.Y.C., one as outright.

Trans Air Service, Inc., Baltimore, Md., one leased.

Jesse J. Kline, 21 Waterbury, New York, N.Y., one bought.

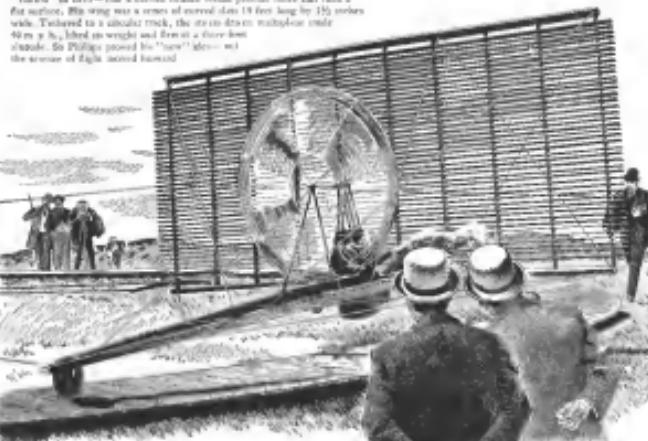
Mexican Air Pioneer Plane Helicopter Service

A proposal to use helicopters to overcome difficulties of mountainous terrain in establishing better communications with many areas of Mexico is being watched with interest in Mexico City.

William L. Mallory, known as a pioneer in Mexican aviation, says he will order 25 helicopters as soon as manufacturers can put them on the market. He proposes to establish 10 routes for mail and passengers. Development of regular airfields or strips would be costly in most of the areas the new company would serve, but helicopter landing areas could be cleared easily.

Horatio F. Phillips, of England, built this 150-lb. model in test his flying "cigar" in 1913—that a curved surface would provide more lift than a flat surface. His wing was a series of curved slats 18 feet long by 15 inches wide. Tensioned to a circular track, the air stream ran underneath about 40 mph, lifted the weight and flew at a three-foot altitude. So Phillips proved his "cigar" theory.

the precursor of today's curved surfaces



The Flying "Venetian Blind"

...it pioneered curved wing-surfaces

Now how man's wings have grown and strengthened. From fragile "Venetian Blind" to gay, world-blazing seafarers, curiously-shaped wing of steel, powered by Northrop at 1929.

From on through developments like the *Steph-Northrop* (1932) which increased the lift of wings. On to retractable ailerons (Northrop 1944) which gave big airfoils finer take-off rates, maneuverability and down loading speeds. And now the *Northrop Flying Wing*, which eliminates fuselage, houses everything in the wing.

Yes, revolutions in design continue. They are a "must" for peace-loving nations to insurance against aggression. A "must," too, for cheaper, faster air commerce and transport.

And creating "flying" is but part of the job. To keep advancing, aviation needs men of experience to prove and develop each idea. Plus men of skill to practice them in quantity. Plus men trained to fly them in the interests of peace.

Today the aircraft industry must keep strong, keep going ahead.



NORTHROP

Creators and Builders of the *Black Widow* P-61 Night Fighter and the *Flying Wing*

AVIATION NEWS • December 17, 1948

Eimac

THE COUNTERSIGN OF RELIABILITY IN ANY ELECTRONIC EQUIPMENT



Electronics

BOOTS AND SADDLES WILL STAY IN THE RUNNING

In many leather-dyeing and processing operations the answer will be quick, controlled, electronic heating. It is already at work on compressing jobs where glues and plastics are used, and in speeding up drying time.

In building the tubes that are the heart of electronics, Eimac brings more than a decade of experience in one of the world's oldest industries. Leather men who specify processing equipment powered with Eimac tubes can count on a double guarantee—one from the equipment manufacturer and another from Eimac.

STEEL-MCCLUGGIE, INC., 121 San Mateo Ave., San Bruno, Calif.

Works located at San Bruno, Calif.

and Dallas City, Texas

Export Agents: Brown & Root, 2001 Congress St., San Francisco 7, California, U.S.A.

NEW ELECTRONIC TUBES—One hundred models for use in any of thousands of electronic tubes—*the new Eimac* (Electron Tube Company) is the name of the company that manufactures them. There is no cost or obligation.



FOLLOW THE LEADERS TO

Eimac
TUBES

TRANSPORT

Agreement With Britain Clouded Despite Conditions on Loan

"Working arrangement" appears most that can be achieved now; U.S. lines restricted to send of 500 passengers weekly; opening of "destroyer deal" bases sought.

The terms of the financial agreement under which this government proposes to extend the \$4,600,000,000 loan to the United Kingdom include an undertaking by the two countries "to reach specific conclusions at an early date" in regard to the "urgent problems" confronting civil aviation. But the status of negotiations last week hardly justified expectation that this objective would be realized.

State Department officials, in private talks, where about ready to acknowledge that the most can be achieved for the moment is the "working arrangement" desired by Britain. This would cover only services between the United States and United Kingdom and would serve during an interim period until a formal bilateral agreement can be negotiated.

New Elements—New elements in the situation last week were:

► Disclosure by the British Embassy that in agreeing to 14 transoceanic routes on the part of American carriers Britain specified that not more than 500 passengers could be carried weekly.

► Confirmation by a State Department official that this government has sought British agreement to the opening of the 20-year leased bases, obtained in the 1948 destroyer deal, to commercial use.

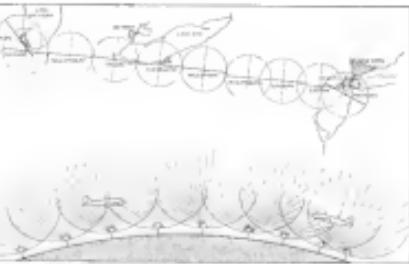
► Consideration by the Civil Aeronautics Board of the agreement filed by American carriers concerning the traffic conference machinery established by the International Air Transport Association.

► France—A new agreement with France was expected to be announced at any moment, meanwhile, but French sources said it would not upset a possible rate controversy that could pit Pan American Airways go through with its announced intention to resume French services on an eight-cent per mile basis.

would be settled at an early date may have been made with an eye on Congress. There have been increasing expressions there of late that our rights should be one of the conditions for granting credit to Britain. Consequently it was believed Anglo-American negotiators might intensify efforts to work out a bilateral agreement in time for announcement before Congress takes up the financial deal.

► **Quota**—Ample—but for the moment it appears Britain is having her way in the matter of an interim arrangement. Both American Airlines and Pan American spokesman said the 500 figure would be ample for DC-4 equipment, but a change in aircraft type and will retard manufacturing development in the field of large aircraft unless raised soon. In view of these temporary necessities of the "quota," it was regarded as unlikely that the State Department will do otherwise.

The State Department official who confirmed that rights are sought at the 50-year lease bases did not say whether Fifth Freedom privileges are proposed. But, in light of this government's known position, it is regarded as certain that such rights are proposed, without restrictions on number of trips. The bases are located in Newfoundland, Bermuda, Jamaica, St. Lucia, Antigua, Trinidad and British Guiana. Some may be unsuited to commercial



VHF ON CHICAGO-NEW YORK ROUTE:

The United Air Lines diagram shows location of VHF radio range examinations installed by CAA on the Chicago-New York route. Below is an artist's conception of how "line-of-sight" radio directional beams overlap to give pilots a straight, true and "distance-free" radio alighting. For its operations over the route, United has instituted a \$350,000 program for installation of VHF equipment at its planes.

use, but in most cases they are the best landing bases in the respective areas. So far there has been no British reply.

IATA Plan—At deadline the CAB had not acted on the traffic conference agreement. If the Board approves IATA's action, American carriers then would be rendered immune from the anti-trust laws.

Both American and Pan American, meanwhile, were back on five trips a week following establishment, to the satisfaction of the British, of a \$375 fare to London. Pan American, however, received a \$349 rate to Ireland, as compared with American's \$314. As far as the British experts concerned, both fares said they are able to handle only about 25 passengers a flight at present and consequently as a practical matter are not restricted.

British Stand—The British Embassy, in justifying the quota, said trip regulation is reasonable unless it is related to carrying capacity. It was said the quota is intended to apply only until a formal agreement is worked out. Then, presumably, a new quota basis will be established.

The State Department last week announced that The Netherlands, Sweden and Honduras recently have ratified the Five Freedoms agreement. South Africa, Australia, Spain and Greece now have ratified the Two Freedoms agreement. South Africa, Denmark, Honduras, Greece and Spain have passed those who ratified the later agreement setting up PICAD.

Transportation Integration Opposed By Damson

Opposition to integration of air transportation with other means of travel was voiced recently by Ralph S. Damson, president of American Airlines. Addressing the Urban League in Philadelphia, he said:

"Integration means that railroads may own and control air lines or air lines may own and control railroads and bus lines."

"We know that aviation could not have made its great strides if it had been tied to the vested interests of other forms of carriers."

Criticism—Damson also told the League that Philadelphia's airport terminal buildings and city-to-airport highway facilities are inadequate.

Duckworth Heads CAB Safety Unit

Col. Joseph B. Duckworth, former post commander of Bryan, Tex., Army Air Field and for ten years a first pilot with Eastern Air



Col. Joseph B. Duckworth

Lines, has been named director of CAB's Safety Bureau. He succeeds Jesse W. Lankford, (below) wartime director, who remains with CAB in charge of accident analysis work.

In the AAF five years, Col. Duckworth served as operations and flying safety officer, director of training, post commander, post commander and wing commander. Under his direction a new and improved system of emergency flying training for the AAF was developed. As president of the

AAF Instrument Flying Standardization Board and member of the All Weather Air Force Board, he wrote many regulations on safety in military flight.

Scandinavian Lines Finish Applications

Applications of the "Scandinavian Airline System" for routes to the U.S. were complete recently with the filing with CAB of a petition by Royal Norwegian Air Transport for two weekly round-trips between Oslo or Stavanger and New York or Chicago. The other two members of the Scan-

dinavian bloc, Denmark and Sweden filed previously.

RNAT would operate via Iceland and, if permission is obtained, Goose Bay, Labrador, with unspecified equipment. Einar Indredal, the airline's president, has recently been in this country discussing transport types with several West Coast companies.

U. S. Plans—RNAT, using surplus C-47s and C-85s is now flying about 6,000 miles daily in Norway and in Stockholm, Copenhagen, Edinburgh, London and Amsterdam. Trans-Atlantic operation will not be undertaken until newer and larger equipment is obtained.

The three Scandinavian airlines will divide their North Atlantic schedules, maintain joint offices in this country, and may eventually pool equipment and revenues. Plans, not yet set, will be as the level to be decided upon by any conference established under the International Air Transport Assocation.

CAR Revision Readied

An amended draft release of pilot route qualifications, Civil Air Regulation 40261, is nearing completion for circulation in the industry. CAB notified the airlines some time ago that it would accept no more requests for waivers of such qualifications, accorded in the past because of war conditions. Plans are to adopt new regulations in a simplified version.

'Aisle of Light' Planned For Idlewild Runway

Parallel walls of light flanking an 8,499-ft. concrete runway will be utilized at United Nations' Idlewild Airport to maintain precise airplane schedules during adverse weather conditions.

Conceived by Adair Koepf, lighting expert of the office of Edward A. Sears, electrical consultants for the Idlewild project, the "aisle of light" was developed by Westinghouse lighting engineers. Each unit of the system, currently planned for 300-ft. spacings with provision for future 100-ft. spacings, will include a 300-watt "sealed beam" floodlight with a parabolic lens in full out light parallel to the runway.

The runway will have four 3,000-watt floodlights, a neon traffic approach signal, and a newly developed smoke generator to show wind characteristics at each end



Bethlehem Denny Aviation Photo

and warning stop to move at a helicopter. There is something miraculous about a machine that hangs or moves in the sky without wings or propeller. And flies forward, sideways or backward—hover in one spot—rise or descend vertically, linking an aerial with the ground, to make flying an easy step to anywhere.

The helicopter's sligh crowd appeal was shown (above) a few months ago in a demonstration of the Kelllett XB-8 military model at Fairmount Park, Philadelphia, under sponsorship of the U.S. Army Air Forces.

With the ease of a handcart, the XB-8 flew in, high over the crowd, and landed to rest in a space only 100 feet square. Then the helicopter soared straight up, backed, swung from side to side like a pendulum, whirled, hovered, finally sped forward, at a furious clip than a motor car let loose on an express highway, in complete mastery of speed, height and direction.

Just what the public's keen interest in helicopters will mean in future industrial and commercial uses for this unique type of machine is more than we at Kelllett Aircraft can foretell. As the oldest American designer and producer of rotary-winged craft, we consider one of the helicopter's most valuable features something we did not design or make—in its inherent "crowd appeal," even to a nation which accepts modern unshielded trains and 400-mile-an-hour airplanes without a second glance.

Operating details, including cost and payload, may postpone the widest practical application of the helicopter. However, specialized money-making applications seem close at hand. Kelllett Aircraft and other important organizations in the helicopter field are devoting time, money and expense to hasten the day when these craft will meet the expectations of their most loyal boosters—the American public. Kelllett Aircraft Corporation, Upper Darby, Pa.

KELLETT HELICOPTERS

Problem of Increased Traffic At Terminals Draws Attention

ATA sets up study of long-dormant proposal for jointly operated service corporation; SAE meeting hears recommendation that airlines combine and build own facilities.

Convinced that increased use of terminals alone will not be the answer to the many problems of better service at airports in handling passengers, cargo, mail and planes, the airlines are reevaluating plans leading toward a solution, marking ever-increasing traffic.

At the recent meeting of the Air Transport Association, the board approved a recommendation to appoint a man to study the long-dormant proposal for an airline-owned joint terminal service corporation. The person to be selected also will head up the corporation if it is decided to go ahead with the plan. Discussion centered around the Chicago airport as the "gauge pig" for the initial effort. **Traffic**—The airlines were urged to seek a solution of traffic handling and serving problems at airports by several of the speakers at the recent meeting of the Society of Automotive Engineers in Chicago. One proposal by Albert F. Hrone, United Air Lines architect, went beyond the plan for a joint terminal service company.

"The airlines, individually, or where two or more are at one airport, collectively," he said, "should lease space and construct their own terminals." We are approaching the day when the airlines will be expected to invest more of their funds in the construction of airport terminals. Where two or more airlines jointly construct the facilities, a terminal corporation

could take over the management and operation."

Separation—Hrone reiterated his belief in the necessity for "airline terminals which would handle passengers and separate them from the general public traffic." He also suggested that ground passenger traffic was the leading cause of loading docks into which the plane would nose.

Speedy loading of cargo was stressed by M. B. Crawford, chief equipment engineer of United, who revealed his company is experimenting with a combination truck and belt loader.

Lt Col. David W. Lang, of the Air Transport Command, also discussed landing, asserting that development of ground handling machinery is not the whole answer and that design of the airplane can simplify the problem, but he laid greater emphasis in his SAR paper on a "single ground handling organization at each airport." The idea, he said, is growing on every airline in the country.

Canadian Mail Rate Cut

The Canadian Post Office proposes shortly to reduce its mail rates to "war-time levels" and to carry all first class mail by air. Announcement of this intention was made recently by Canadian Postmaster-General E. Bertrand during debate in Parliament on Post Office estimates.



NEW TERMINAL BUILDING!

Central part of this new administration building to be built at Hickory Airport, Ogden, Utah, shown here in architect's drawing, will be constructed first at a cost of \$115,581. Wings and additional stories will be added as required. Of reinforced concrete frame with brick and concrete block filler walls, the terminal will have operational space for airlines, express, mail, weather bureau, CAA communication, passenger and public facilities.

Airport Selection Near in Detroit

Latest developments in Detroit's long-dormant airport picture seem to indicate that the Wayne County Airport (Bennison Air Base) will be the one used, possibly within three months after damage is reached.

Representatives of eight airlines entering Detroit met recently with Mayor Edward J. Jeffords and Louis G. Shultz, manager of the Wayne County Road Commission. Shultz has been especially active in advocating expansion of the Wayne County Airport to handle the largest transports. In view of these facts, announcement dropping the present City Airport, claimed to be too small to accommodate four-engine equipment soon to be in operation, was expected at any moment.

Northwest Airport—General feeling now appears to be that the Northwest Airport, favored earlier by the airlines and currently the subject of confirmation proceedings, could not be put into operation for several years, and the airlines cannot wait.

Meanwhile, the five domestic carriers certificated into Boston are trying with interest a controversy raging over ground transportation between the city and airport. A franchise to operate the service at a 75-cent fare has been granted the State Line Motor Coach Co., Inc., operator of three night-stage buses, over strenuous opposition by the Massachusetts Public Utilities Commission. Boston Elevated Railroad had submitted a bid to operate daytime bus service for 25 cents, but reportedly was refused by the five-man commission on a strictly party vote of three Democrats to two Republicans.

Interest—Airline interest centers not around the controversy of who should operate the service, but rather the means of accommodating these passengers.

With 122 flights per day in and out of Boston, obviously the airlines feel that State Line's limited lounge service would be insufficient and other forms of surface transportation, such as taxi or subway, inconvenient.

Concern is also felt over Salt Lake's application for a 25-year concession for exclusive operation of this service, together with operation of all other airport services for handling baggage carts, gasoline facilities, etc.



A war-tried friend for peacetime flyers

IT'S a pretty safe bet that there's hardly a man who served in the Army, Navy and Marine Corps Air Forces who doesn't know Western Electric. During the war, Western Electric produced well over a million aircraft radio transmitters and receivers as well as vast quantities of other electronic devices for use in the air. This equipment has been a friend in need to our fighting men. May it

Thousands of these men will enter the field of civil aviation now the war is over. They'll bring with them their faith in Western Electric equipment. And Western Electric—you may be sure—will be there to give them the finest radio and other electronic apparatus for airborne and ground station service.

Buy all the Victory Bonds you can—and keep them!

Western Electric

RADIO AND OTHER ELECTRONIC EQUIPMENT FOR A WORLD ON WINGS



New Telecommunications Code Written at Rio Radio Conference

Articles 22 and 23 will have pledged support of American nations under convention when it is ratified by participating governments; official report now being prepared.

By BLAINE STUBBLEFIELD

"Safety of Life at Sea and in the Air," and "Facilities for Transmission of Meteorological Information," next year, to be followed "as soon as possible" by another Western Hemisphere conference.

nation?" (Articles 22 and 33) will have the pledged support of American nations under the new Inter-American Telecommunications Commission, to be established by the Third Inter-American Radio Conference at Rio de Janeiro, Sept. 3-27, when the convention is ratified by participating governments.

An interim report was furnished to Aviation News by A. L. Lebel, Chief, Communications Section, Aviation Division, State Department, and other sources, in advance of the official American Delegation report which is being prepared for U. S. FCCAC officials.

at Montreal

Conference — The convention, only legally-enforceable instrument adopted at Rio, is now subject to ratification by all American governments (Brazil and the Netherlands were not represented). A world telecommunications conference is planned for late

ral information in accordance with regional, and bilateral, agreements among the national meteorological services concerned.

The convention also contains resolutions of importance to aviation. It invited American countries to accept the principle that violation



VETERAN TRAINING AT TCA:

Seasoned war veterans combat and transport pilots coming back to civilian aviation duties are taking six weeks training courses at Trans-Canada Airlines headquarters at Winnipeg before going aboard TCA aircraft as second officers for at least six months. The veterans are taught to fly on commercial standards, study weather, radio, mechanics of TCA aircraft, airline procedures. Photo shows a clean, some still in uniform, standing radio range flying under TCA instructor J. Meekins.

of frequencies granted to aeronautical services by international radio conventions as a matter for determination by the competent international and regional civil aviation organizations.

Proposals — Two recommendations were offered: That all records of the IIC conference dealing with aviation be submitted to ICAO, and that regional commissions meet to discuss technological and frequency needs for meteorological services.

The conference wrote several memoranda and suggestions, on which it did not wish to take a final position at the time but which should have the attention of interested governments. They include:

Article 3, 4, 5, and 6 of the 1940 Santiago Agreement, which deal with the use of 589kc as a datum frequency, frequency tolerance, non-essential radiations, and elimination of interference from electrical equipment, should be retained.

- Came round frequencies and flight safety installations as a matter for attention by ICAO.
- Reaffirmed Santiago on far more radio frequencies below 5,000 feet to serve continental air routes.
- Reaffirmed Santiago on revision of air routes into sectors for purpose of coordinating air traffic control and making efficient use of frequencies.

→ Redrafted Santiago to lay stronger emphasis on necessity for flexibilities (including frequencies) for efficient long- and short-range aviation commercialisation

Proposed for consideration by world conference a scheme of priority of radio services (1) those involving preservation of life and property, where other means of communication are available, and (2) essential communications services which must use radio because no other medium can be used.

A tentative table of radio frequency allocations was submitted for study by interested countries

Brantif Cuts Express Rate

Braniff Airways has filed with CAB a supplemental tariff to reduce its international air express services between four Texas cities and Mexico City. Effective Jan. 10, rates from Dallas and Fort Worth will be cut from 40 to 38 cents a pound; from San Antonio, 33 to 30 cents a pound; from La-



Solar Exhaust Manifold "In Action"

THE ABOVE PHOTOGRAPH, taken in complete darkness without artificial lighting, dramatically shows the intense heat Solar airplane exhaust manifolds experience in service. This gaudiness goes on hour after hour for thousands of hours—a striking testimony to Solar workmanship.

During the past 15 years, Solar has fabricated over 300,000 engine sets of airplane exhaust equipment representing more than 1000 designs. The "know-how" gained extends over all stainless steel forming techniques from deep drawing to precision crating.



SOLAR
STAINLESS STEEL PRODUCTS

SOLAR AIRCRAFT COMPANY - SAN DIEGO 12, CALIF. - DES MOINES 5, IA

American Grants 10.7% Pay Raise

Without waiting for settlement of a jurisdictional dispute among four labor unions for designation as bargaining agent for American Airlines mechanics, AA recently took the initiative and granted pay increases averaging 10.7 percent.

Rates include sick and paid holidays, extra pay for night work, and for working overtime. Increases amounting to the raise will be an additional, automatic 2.5 percent increase in hourly pay Jan. 1, allowing reduction in a 48-hour week at no decrease in take-home pay.

► **Election.**—Announcement of pay increases came after notification by the National Mediation Board of its inability to certify a bargaining agent following an election in which none of the four unions—United Airlines Mechanics (UAW-CIO), International Association of Machinists (AFL), Transport Workers Union (CIO), and Air Carrier Mechanics Association (Independent)—received a majority of eligible votes cast.

Current indications are that another representation election will be invoked by TWU, probably within the next month. AA had been refused a request for a run-off election between the two highest unions, TWU and ACMA, in order to assure a majority vote.

ACMA, backed by the Air Line Pilots Association (AFLP), received on wages \$37 of the \$348 wage cast, trailing TWU by only 14. It appears likely that ACMA would pack up some \$60 worth cast, presumably for LAM should the latter drop from the next ballot.

► **Oversize Action.**—American Overseas Airlines, meanwhile, has announced a new wage agreement providing average wage increases of 11 percent for its mechanics. Reached with UAM, the agreement also specifies orderly settlement of grievances, no lockout by management and no strike by the workers until procedures under the contract and Railway Labor Act have been exhausted. Rates are retroactive to Oct. 1, and are also augmented by a 2.5 percent raise to cover reduction of the work-week.

NWA Officials Reelected

All officers of Northwest Airlines were re-elected at a recent meeting of the board of directors. They are: Cecil Hunter, president and general manager; E. J. Wherry, vice-president and treasurer; George E. Gardner, vice-president, operations; K. R. Ferguson, vice-president, engineering and planning; N. O. Hallieckel, vice-president, traffic; A. E. Flawn, secretary; L. S. Holsted, assistant treasurer; and Camille L. Scott, assistant secretary.

CAL Tulsa-El Paso Line Set to Start Feb. 15

Inauguration of service over a new air route linking Tulsa, Okla., with El Paso, Tex., by Feb. 15 is the goal of Continental Air Lines.

Granted last May by CAB in its Memphis-Oklahoma City-El Paso decision, the extension of CAL's AM 23 from Hobbs, N. Mex., to Tulsa will bridge together its present routes. Survey trip over the new route was made last week.

► **Other changes.**—Meanwhile, other carriers have reported the following recent service changes to CAB:

Amesair—Established service to North Creek, Mich., on AM 1, effective Dec. 30.

Continental—Using all DC-3 equipment, increased service to

Eastern—Added one round trip daily between St. Louis and Miami, effective Dec. 1.

Northwest—Added one roundtrip daily between New York and Miami, effective Dec. 1, and extended service to Wilkes-Barre, Pa., on AM 21, effective Dec. 30.

Pan American—Added Linen, Paraguai to its southern route, effective Dec. 1; and will add one roundtrip daily between Miami and Manila, starting Jan. 1, and will extend service to Manila and Guatemala, effective Dec. 15.

PAA—Added one roundtrip daily between New York and San Juan, Puerto Rico, and Pittsburgh via Washington, effective Dec. 15.

PAA—Added service to Red Bluff, Calif., on AM 12, effective Dec. 1.

Western—Rescheduled service to Santa Fe on AM 23 and added three new routes: Denver-Boulder-Snowmass, Denver and San Francisco, beginning Jan. 1, effective Dec. 1.



Eastern Air Lines Transcontinental Routes. Eastern Air Lines' proposal to link the Pacific Coast with the southeastern part of the U. S. is shown on this map, fitted with its application (AVIATION NEWS, Dec. 10).

Solid line is Eastern's present routes. Heavy dash line shows extensions requested in the current application, and the lighter dash line indicates routes asked in the Latin American and Florida cases.

Let's talk on a new plane . . .



The magazine that Makes plane Facts exciting

Mechanix Illustrated readers are a bunch of "nuts" about flying. They use the magazine to answer their personal aviation questions. Mechanix Illustrated nuts leave them up in the air. Right now this greatest bunch of coupon clippers in the country wants the newest that's known about flying. They're getting it in every issue of Mechanix Illustrated—getting it first, getting it straight. Reach your interested market by putting your place talk in Mechanix Illustrated.

Fawcett Publications, Inc., 295 Madison Ave., New York 17, N.Y.
World's Largest Publishers of Monthly Magazines



EDITORIAL *****

Dissolve The Military, Dictatorial IATCB

WHEN this is civil aviation to be freed of the war-born Interdepartmental Air Traffic Control Board which, with its military and naval representatives, continues to hold virtual veto power over all navigable airspace?

The board has not a shred of legal justification for its existence. It has usurped, and continues its grasp on, the powers granted CAA and CAB by the Congress.

The IATCB holds dictatorial sway over all matters of civil airways and facilities, despite Section 301 of the Civil Aeronautics Act which grants these powers to the administrator. The IATCB controls issuance of air carrier operating certificates and conditions of operation; yet Section 604 of the act specifically gives these duties to the Authority, along with the rights of CAB in Title VI to prescribe air traffic rules. The IATCB has attempted to move into the area prescribed by Section 1101, giving the administrator the right over notices of construction or alteration of structures along or near the civil airways.

Although the board's origin popularity is sacrificed to an executive order from the White House, it had no such legal birth. President Roosevelt on March 8, 1942, merely wrote a letter to the Secretaries of War, Navy, Commerce, and the chairman of the CAB citing a great increase in aviation activities which called for full coordination in the use of all aviation facilities and navigable air space. He proposed an interdepartmental board, and the tenor of the letter clearly indicates a clearing house of information. "Accordingly, all branches of the Department of Commerce should keep the board continuously advised of any action contemplated, such as gunnery and bombing practice, or of prospective plant locations, or airways which may affect navigable air space . . ."

Effective April 1, 1942, the secretaries issued another memorandum. This resulted from a second letter from the White House, suggesting "further strengthening" of the board. The secretaries agreed "to continue to cooperate fully in strengthening the position of the board by having the personnel of their respective agencies refer to the board all pertinent matters . . . and by using their full authority to make effective those recommendations of the board which, as hereinafter set forth, are approved by the War Aviation Committee and these recommendations of the board which . . . become final without approval of that committee." The secretaries then proclaimed

"such recommendations of the board shall be binding upon the agencies represented thereon." The parties, therefore, in the middle of a war, voluntarily committed themselves and their agencies to the dictates of the military-dominated board.

The war, however, is over. Virtually all other wartime restrictions are being lifted. Military air traffic has dropped off. Private flying has been returned to practically all defense areas on both coasts. Why should thousands of private flyers, our domestic airlines and the CAA with its 11,000 employees—1,500 of them in the federal airways system—continue hamstrung by a military-dominated red-tape mill which now is pompously and laboriously determining whether it is imminent to the national defense if Farmer Jones keeps his Aerocess in the pasture? If that peasant of Farmer Jones is deemed to be no threat to the national safety, the pasture is officially "designated."

Not generally known is the fact that any one of the four parties to the IATCB agreement may at any time write a note to the others stating his withdrawal. That would end the board. The secretaries of War and Navy, of course, will be unlikely to do this.

Mr. Wallace and Mr. Pogue could well take this action in the public interest—and quickly. If they do not it must be supposed that because they must get along with the Army and Navy on other matters they will consider it in the long-range public interest to permit the red-tape IATCB to die officially by something akin to inanition.

Mr. Pogue's recent National Aviation Clinic address, however, gives a ray of hope that he will speed up the abrogation of this agreement, and the end of the war emergency regulations. Throughout the world, civil aviation, he pointed out, has developed greatest in the U. S., where it is free from the control of the military, yet "there appears to be developing, and sometimes with strong leadership, a movement to give the military air forces a voice in civil air matters . . . it is not clear what civil air matters may be in mind nor is it clear whether a 'voice' means an advisory voice or a voting voice."

Mr. Pogue has pointed to a significant symptom of civil aviation's sleepless sickness on airspace matters. As long as the IATCB's military members are dictating vital policy matters to the agencies given these same powers by Congress, just that long will civil aviation be strangled by the thumb of the military.

ROBERT H. WOOD

AUTOMATIC LANDINGS!



. . . made possible with Sperry Model A-12 Gyropilot*

With valuable Remote Loceline and Glide Path Control equipment, the Sperry Model A-12 Gyropilot makes possible automatic landings under all conditions of visibility.

This Sperry Gyropilot takes over completely the task of seeking and adhering to the horizon on the approach and lands the plane gently . . . it soon教uring function any automatic pilot can perform.

The human pilot with the A-12 Gyropilot has complete gyroscopic attitude control until landing time . . .

- Perfectly banked turns at low air speed—automatically
- Gyroscopic compass directional control—continuously slaved to the magnetic meridian



- Automatic trim of elevator controls regardless of changing load conditions
- Utmost in passenger comfort—precise control and elimination of over-control, "flourishing," and "wallowing"
- Electrical and mechanical interlocks—automatically insuring proper manual operation
- Automatic and instantaneous synchronization—no matching of position or other indicators

These and other features of the new Sperry A-12 Gyropilot introduce a new era in aerospace flying. Write our Aerospace Department for further information.

SPERRY GYROSCOPE COMPANY, INC., GREAT NECK, N. Y.



Division of the Sperry Corporation

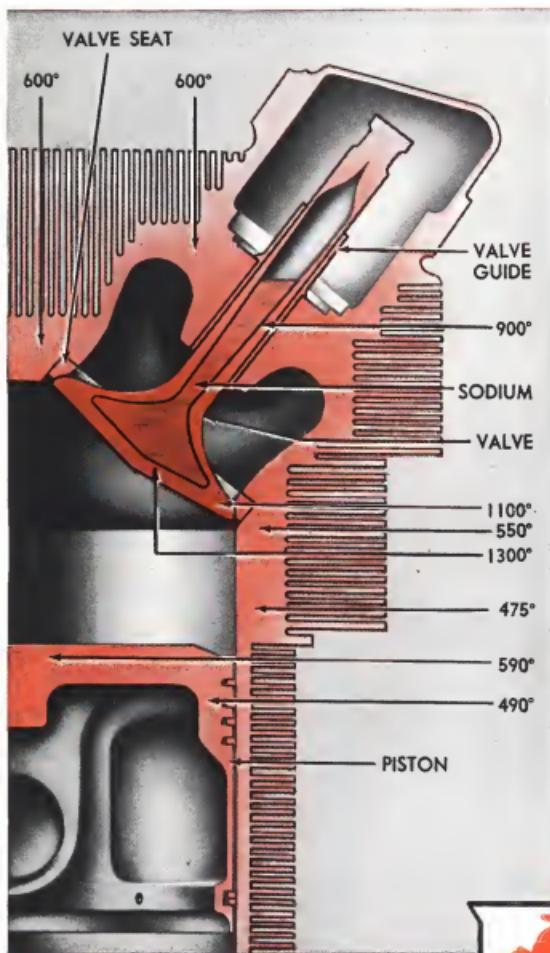
103 ANDREWS • SAN FRANCISCO • SEATTLE • NEW ORLEANS
CLEVELAND • BIRMINGHAM • HONOLULU

*Patent number 2,240,600

GYROSCOPIC • ELECTRONIC • RADAR • AUTOMATIC COMPUTATION • SERVO-MECHANISMS

For Free-Acting Valves—Use the Oil that

Fights this Inferno



In 1000° Heat of
Aircraft Cylinder Heads
New Mobiloil Aero
Minimizes Wear on
Valves, Resists Formation
of Gummy Deposits!

LUBRICATING VALVE STEMS (like the one shown here) is one of the toughest tests of engine oil quality.

For here scorching heat continually attacks the thin oil film...tends to cause rupture and "frying" which results in excessive wear.

To offset this, new Mobiloil Aero has built-in chemical stability that gives maximum resistance to gum, lacquer and sludge formation. Its strong, protective film means maximum lubricity.

Operational flights covering thousands of air-hours have proved new Mobiloil Aero's exceptional wear-resisting qualities under all flight conditions.

SONOCY-VACUUM OIL COMPANY, INC.
26 Broadway, New York 4, New York and
Affiliates: Magnolia Petroleum Company,
General Petroleum Corporation of California



Mobiloil Aero

SAVES POWER
SAVES WEAR